An Address

ON

THE MEDICAL ACTS OF PARLIAMENT: AS THEY ARE AND AS THEY OUGHT TO BE.

Delivered before the South-West London Medical Society on Dec. 8th, 1897.

BY VICTOR HORSLEY, F.R.C.S. ENG., F.R.S.,
DIRECT REPRESENTATIVE ON THE GENERAL MEDICAL COUNCIL.

MR. PRESIDENT AND GENTLEMEN,—I wish to lay before this society to-night certain facts regarding those particular statutes under which we practise our profession because I have found that even in certain circles a considerable amount of misapprehension prevails as to the exact powers we are accredited with as members of a body politic by the Acts of Parliament of 1858 and 1886. In the first place the profession in 1858 was put into the following precise position by the Act of that year. The members of the profession were called "qualified practitioners" in the preamble of the Act and it was stated that it was expedient that persons requiring medical aid should be able to distinguish qualified from unqualified practitioners. We should specially observe the word used is "practitioner." The Act therefore was constructed not to protect a mere title but a person who practises his profession. Then we look through several sections to see what the Act defines a practitioner to be and we find that after the day on which the Act becomes operative the words "legally qualified medical practitioner" or "duly qualified medical practitioner" or any words importing a person recognised by law as a medical practitioner or member of the medical profession when used in any Act of Parliament shall be construed to mean a person registered under this Act.

The Act then of 1858 put us into this position that we being *registered* practitioners of medicine are alone *qualified* practitioners of medicine. This however is not the view which had been taken even by many persons up to the recent session of the General Medical Council. We have now succeeded I think in convincing them that this view is the correct one. The customary contention has been that this Act only dealt with us as having a title and wherever you go you will find a rooted belief that the Medical Acts only protect our diplomas or titles and do not protect us in our practice. It is true that the Medical Defence Union found in prosecuting unqualified practitioners that there was sometimes great difficulty in getting magistrates to convict and the Union pointed out that it would be expedient to get an amendment of the Act to make it clear to any authority not gifted with perception that a person who was not *registered* was not entitled to practise and that if he did so he should be punished. Of course, as I said just now, this is contained already in the Act of 1858 and I have only to add that the Act of 1886, Section 6, says that on and after the day appointed for its entering into operation a *registered* medical practitioner shall be entitled to practise medicine, surgery, and midwifery in the United Kingdom and in any other part of Her Majesty's dominions and to recover in due course of law in respect of such practice any expenses, charges, &c. The converse of that position is of course that any person who is not registered is not entitled to practise or to sue for professional charges and it is provided in Section 40 of the Act of 1858 that "any person who shall wilfully and falsely take or use the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner, or apothecary or any name, title, addition, or description *implying that he is registered* under this Act or that he is recognised by law as a physician, &c., shall upon a summary conviction for any such offence pay a sum not exceeding £20." Going back again to Section 34, in which it says that a *qualified* medical practitioner is only a person "registered under this Act," the conclusion is obvious that any person who is not on the Register is within the punishment provided by Section 40.

I stated some time ago that the advisers of the Council did not fully recognise the provisions of the Medical Acts. In an opinion given by the legal assessor in 1895 he said that there was a difficulty in the case of a person struck off the Register but whose qualification was not taken away by the body granting it. But in that case he was using the word qualification in a popular and wholly inaccurate sense, according to which the parchments which we obtain from the corporate bodies are "licences to practise," but whatever these diplomas were in a pre-historic past their character is governed by the Acts of 1858 and 1886. The Act of 1886 says a qualification examination shall be an examination in medicine, surgery, and midwifery held for the purpose of granting a diploma or diplomas conferring not a right to practise but the right to be *registered*. That is where the whole structure of the Medical Acts comes in. So that our diplomas do not give us in the eyes of the law the right to practise but the right to demand that our names shall be placed on the Register. The obvious inference is that any person not on the Register should be prosecuted. To take a case in point and which occurred on the first day of the late session of the General Medical Council. It was reported in the medical journals, but I am sorry to say that the report conveys no idea of its great importance, whereas, as a matter of fact, it strikes at the whole root of registration. This case was as follows. A certain practitioner in one of the colonies had had his registration taken away from him by the General Medical Council. He made application to have it restored in the usual way, but meanwhile his name had been erased from the list of Licentiates of the Apothecaries' Society. He therefore possessed no qualification. Nevertheless that Society wrote to the Council to this effect—it is true that this gentleman's name has been erased, but his qualification has not been withdrawn. When this remarkable statement was received by the Council I drew attention to the serious nature of the question and pointed out that a man could not be on a list and off it at the same time. That was the real position as represented by the Apothecaries' Society through Mr. Upton, their solicitor and secretary. On discussion the question was postponed for the further opinion of the legal advisers and finally, in accordance with an unfortunately common procedure of the Council, it was referred to the next session and that is where the matter stands.

Now to return to Section 3 of the Medical Act of 1886: "A qualifying examination shall be an examination in medicine, surgery, and midwifery." The Licentiateship of the Apothecaries' Society is granted after an examination in these three subjects, and because the General Medical Council allowed the Apothecaries' Society to examine in the three, then the L S A. became a triple qualification. But this in no wise supports the claim of the Apothecaries' Society to do what they like with their diploma. What that diploma is is simple: it is a statement from the Society that they have examined Mr. X. Y. Z. and find not that he is a fit and proper person to practise medicine, midwifery, and surgery as required by the Act of 1886, but that he is fit to practise as an apothecary. Since in the first place the diploma dates from 1815 it naturally does not include any of the requirements in 1886. The Section in the Apothecaries Act (14) states that they are to examine persons applying to them for skill in the practise of medicine and their fitness and qualification to practise as an apothecary. But it goes without saying that that confers no *statutory* right to practise the three requirements of the Act of 1886—namely, medicine, surgery, and midwifery. The mistake which has arisen in Mr. Upton's mind is evidently that a diploma which will be accepted by the General Medical Council as a *registrable* triple qualification is at the same time by statute a licence to practise in all these three things. It is, however, not a licence so to practise and no other corporation has put forward a similar claim.

So far, then, the Medical Acts show the Register to be the only portal to the profession. Now we have to look and see how the Acts should be amended so that in the matter of protection of qualified practice there shall be no doubt in the mind of even any magistrate or judge. All that is apparently wanted is a slight rearrangement of the words of the section stating that no person but a registered practitioner shall be entitled to practise medicine, surgery, and midwifery, breach of this same section being punished by fine and imprisonment. Then we shall have something perhaps at which no lawyer can cavil, if such a thing is possible.

Next we may consider some points relating to the other privileges of the profession. By virtue of the Medical Acts we are supposed to be accorded certain privileges in addition to the great privilege of medical practice. It is established by the Act of 1858 that no person shall hold any appointment of any kind to any public body or friendly society without being registered under the Act; moreover, no medical certificates and so forth shall be valid unless the person signing is registered under the Act. Before I had to resign the chairmanship of the Medical Defence Union it came to the knowledge of the Union that unqualified persons are placed as medical officers in public situations and that as regards medical certificates every possible attempt is being made to evade the responsibilities of the laity towards the profession; in other words, to evade paying for the certificates they are obliged to have under the law. This evil will now, I am glad to say, be actively resisted by the General Medical Council.

Other privileges originally granted to the profession under the Act have been really, I do not say taken away from us, but so lost sight of by the Council in times past that they have practically become dead letters. The prosecution of an unqualified practitioner is attended with expense and it was designed by the Act that this should be covered by the penalties being paid to the Council. By reprehensible carelessness the Metropolitan Police Act was allowed to step in and take these monies from us. The profession is, in fact, being heavily taxed and another Act of Parliament is wanted to restore any fines recovered under the Act to the treasury of the General Medical Council. The Council recently approached the Government on that point, but the deputation was politely received with a *non possumus* and so it will be until we can go to the Government and speak with a little stronger voice than in the past.

I have dwelt on the chief feature of the Act of 1858 and brought in from the Act of 1886 so much as was necessa... supplement that of 1858. I would like next to p... that the administration of the Act is practically in ... of the General Medical Council, which consists ... chosen by various corporate bodies, some ele... profession at large and a few nominated ... Council. The constitution of a council comp... must of course lead to very considerable diver... and the attaining of concentrated action m... difficult task until the constitution is altere... Parliament and rendered more homogeneous. ... intentions the representatives of the various co... cannot divest themselves of the interests of th... corporations in considering the general interest... fession. To take the first of two cases in illustrati... sion arose in the past session on an important re... nished by the Dental Examination and Education Com... In the first place let me digress to say that it is an intole... grievance to the dentists of this country that they have n... direct representation on the Council. They pay money (between £500 and £600 a year) to the Council, which spends that money as it wills, and yet they have no voice in that expenditure or to defend their interests. As a matter of elementary and constitutional justice the next vacancy among the Crown members should be filled by a representative member of the dental profession. Before the Council was a report which only touched the interests of five corporations, yet immediately there was roused an inter-collegiate dispute between a leading English corporation and the representatives of certain Scotch corporations, because the points at issue were not regarded sufficiently broadly and because the technical points involved were not handled by a specialist.

Such is of necessity the result of the present corporate representative constitution of the Council. The second illustrative matter is the evil of the preliminary examination. We all of us agree that the profession is suffering from what is called "overcrowding," but we do not all quite realise, I think, what overcrowding amounts to. It is, however, certain that part of what is called overcrowding could be prevented if we raised the standard of the preliminary examination. When the preliminary examination came up for discussion it appeared that although almost all the medical corporate bodies had given up this examination there remained two that had not. Naturally one would have thought that as nearly all the bodies had agreed on the point these two would have followed suit. But no, they held to them the more tenaciously this session than before because they said their preliminary examination is better than those held by their former competitors and than some of the examinations unfortunately still recognised by the Council, and this is undoubtedly the case. This question, however, carries with it a far larger one—viz., that of the one-portal system. It is clear that a one-portal system should be a complete series of examinations of absolute uniformity throughout the United Kingdom from preliminary to final and controlled by the central medical governing authority—namely, the General Medical Council. These examinations would confer upon the successful candidate the State qualification to be registered, carrying with it the title of doctor.

It occurred to Sir Christopher Nixon, the Representative of the Royal University of Ireland, that the simplest way of saving the time of the Council and the Education Committee in the matter of preliminary education and of clearing the ground would be to settle that the Council should hold its own preliminary examination. Recognising, however, that there might have to be some change in constitutional procedure Sir Christopher Nixon moved and I seconded a proposal that the Education Committee should inquire what steps would be necessary to be taken if such a proposition should be considered. Unfortunately the Council refused to inquire even into the matter. There is no doubt that the representatives of the corporations, who all voted against inquiry, felt that this was the thin end of the one portal wedge and that the diversion of the funds would cause the usefulness of the bodies they represent to diminish. This perfectly reasonable apprehension can, I think, be easily removed. The income of these corporations or guilds is spent practically on two objects besides maintenance of the offices and councils of the bodies. These objects are (1) the remuneration of examiners and (2) the maintenance of various public duties ...e.g., the Hunterian Museum by the Royal ...eons of England. The remuneration of ..., will be provided as before, and pro... ...s from the fee funds of the examina... ...ond requirement, even if the Treasury ...ake its proper share in financially ...r of institutions carried on for the

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HOSPITAL ABUSE IN BRADFORD.—At the last meeting of the Bradford and District Medico-Ethical Society the President, Dr. Hime, read a paper on this subject, referring in detail to the various points which he considered most objectionable in the administration of the Bradford hospitals, including the treatment of persons in hospitals who could afford to pay for private attendance, the treatment of large numbers of very trivial cases, the "home patient" system, the misuse of the hospitals by manufacturers sending their workpeople there in large numbers for very small subscriptions, &c. Dr. Hime's paper led to a discussion in which his views were strongly supported. Ultimately a committee, consisting of members of the staff of all the hospitals and of general practitioners, was appointed to inquire into the whole matter and report to the society.

A Lecture
ON
INFANT FEEDING.

Delivered to the Post-gradvate Class at the Evelina Hospital for Sick Children, London, on Oct. 27th, 1897,

BY GEORGE CARPENTER, M.D., M.R.C.P. LOND.,
SENIOR PHYSICIAN TO OUT-PATIENTS AT THE HOSPITAL; EDITOR OF "PEDIATRICS."

GENTLEMEN,—I need not impress upon you the importance of infant feeding or apologise for having selected this subject rather than a clinical demonstration on cases of interest in the wards of the hospital. Such sink into insignificance in comparison with the difficult problem I have selected, a problem which all of you are called upon to solve and that being so I ventured demonstration on the subject would and repay you for an omission gical colleagues will fill very

nt is of course the mother's ould feed their infants from atest privileges of maternity dy. A healthy mother who her chest or because of the n from gaiety passes her strangers for its nourish- censured. Moreover, nursing er; it stimulates her uterus ive of future harm to that is so desirable that a healthy her offspring so it is most un- mother suffering from serious organic disease should attempt to perform that function. I would here mention phthisis and any tuberculous affection of the mammary glands as a contra-indication to nursing. Those in whom there is a strong family history of insanity had better not nurse their children—at any rate, nursing should not be carried to such an extent as to undermine the general health. The fact must never be lost sight of that the mind has a great influence for good and evil on the body of the mother and so on the production of milk. Emotional disturbances of all kinds are most harmful and may make the milk actually poisonous to the infant. The child should be placed to the breast as soon as the mother has recovered from the fatigue of the labour, say in three or four hours after her confinement. If there is no milk at first wait for a few hours until it is secreted placing the child at the breast every three hours. Do not give gruel; a little sugar-water may be given if necessary from time to time. As soon as the milk is secreted apply the child alternately to each breast even though a preference is shown for one only. The child during the first week should be suckled every two hours between the hours of 5 A.M. and 11 P.M. and only at fixed intervals. If the child be too weak and puny to take the breast then it will be necessary to feed it at frequent intervals by teaspoonfuls, using either a sterilised mixture of cream and whey or a peptonised humanised cow's milk or a modification of Dr. Gaertner's milk which I will presently mention. Cream and whey mixture is prepared as follows: ordinary cream (20 per cent.), 1 fluid ounce; whey, 2 fluid ounces; and sugar of milk, 1 drachm. This should be sterilised for half-an-hour. The whey is prepared by adding essence of pepsin to fresh milk, which is to be gently warmed. When the milk is set break up the curd quite small, allow it to settle, and then carefully strain it through several folds of muslin, finally squeezing the contained curd so as to extract all the moisture.

During the period of nursing several important problems will arise. For instance, should a mother continue to nurse when she again becomes pregnant? Assuming that the mother and child are healthy the child need not be weaned until the sixth month of pregnancy. Should, however, the double drain on the mother's constitution prove harmful to both of them, shown in the case of the child by gastro-intestinal disturbances, then weaning had better not be delayed. There is also just a possibility that the reflex effect on the uterus may lead to a miscarriage. Should any tendency to such a mishap be discovered then the child must be fed artificially. Another point for consideration is that menstruation sometimes causes gastro-intestinal disturbance in the infant said to be due to an increase of proteids in the milk. If this should occur give the infant a little boiled water before feeding and reduce the meat diet of the mother. But there are some mothers who are only capable of partially feeding their offspring. What should be done? The breast milk should be supplemented by Dr. Rotch's cream food or Gaertner's humanised milk or a modification of cow's milk previously determined by a chemical analysis of the mother's milk. If analyses of the mother's milk are decided upon it should be drawn off by the breast pump five minutes after the child has been placed to the breast.

When a mother from various causes is quite unable to suckle her child two courses are open to you—viz., the employment of a wet-nurse or the use of some modification of cow's milk. Of the alternatives nothing can compare with a healthy wet nurse if her milk is suited to the digestive peculiarities of the infant to be reared. The fact that the wet nurse should be strong and healthy and free from disease need hardly be dwelt upon or that a careful medical examination will be necessary before engaging her. She should be between twenty and thirty years of age and if the foster child is strong and vigorous a primipara may be selected, but should the child be weak and puny a multipara, as the milk will not be so difficult to digest. If her infant be strong and healthy this will be a point in her favour. She should not have been recently confined as the colostrum is undesirable. It will not be a drawback if there is a difference of two or three months between the ages of the children and in one respect it will be an advantage, as the wet nurse's child would have shown any symptoms of congenital syphilis by this time if the disease be present. Of course no syphilitic child can be allowed the advantage of a foster-mother. The treatment of the nursing mother and the wet nurse demands your careful attention. A plain mixed diet, with slight excess of fluids and meat above what she has been in the habit of taking, will be found ample. A small quantity of alcohol may be taken if she has been accustomed to it, otherwise it is unnecessary. Alcohol in small quantities increases the quantity of fat in the milk. Over-feeding and an excessive meat diet will make the milk so rich in proteids as to be quite indigestible. She should take exercise every day and seize every opportunity of being out in the fresh air. You must not lose sight of the fact that various drugs, some of them of a poisonous nature, pass into the milk and upset, or perhaps even poison, the child. Saline purgatives are not desirable as they are likely to stop the milk. The health of the nursing woman naturally requires attention and dyspeptic troubles or anæmia will necessitate the appropriate treatment. If a wet-nurse is selected she must not be allowed to visit her child, but the mother whose child she is nursing must make it her business to see that the child is properly cared for as an anxious, fretting wet-nurse will not produce good milk. No wet-nurse should be allowed to dose her charge on any pretence whatever. The administration of opium is not unknown.

When should the child be weaned? The breasts, as you are aware, begin to fail at various periods of nursing, but no infant should be nursed longer than the first year even under the most favourable circumstances as rickets will surely result. When weaning has been decided upon it should be done by degrees, the artificial food selected gradually taking the place of the breast milk. The process should extend over a period of one month and at the end of that time the mother should send the child away or leave it for a few days. Do not wean a child when he is cutting a tooth and avoid, if possible, the very hot season of the year for fear of summer diarrhœa and postpone it if he has just recovered from a severe illness.

In the event of a mother being unable to nurse her infant, and in the absence of a wet-nurse, what artificial food can be recommended? There is but one answer to this question and that is cow's milk. Chemical analysis of healthy human milk shows that it is composed of the following constituents: fat,[1] 4 per cent.; proteids, from 1 to 2 per cent.; milk-sugar, 7 per cent.; salts, 0·2 per cent.; and water from 87 to 88 per cent.

[1] The percentage of fat according to Pfeiffer is 3·1 per cent., Adriance 3·8 per cent., Leeds 4·1 per cent., and Hoffmann 4 per cent.

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Other privileges originally granted to the profession under the Act have been really, I do not say taken away from us, but so lost sight of by the Council in times past that they have practically become dead letters. The prosecution of an unqualified practitioner is attended with expense and it was designed by the Act that this should be covered by the penalties being paid to the Council. By reprehensible carelessness the Metropolitan Police Act was allowed to step in and take these monies from us. The profession is, in fact, being heavily taxed and another Act of Parliament is wanted to restore any fines recovered under the Act to the treasury of the General Medical Council. The Council recently approached the Government on that point, but the deputation was politely received with a *non possumus* and so it will be until we can go to the Government and speak with a little stronger voice than in the past.

I have dwelt on the chief feature of the Act of 1858 and brought in from the Act of 1886 so much as was necessary to supplement that of 1858. I would like next to point out that the administration of the Act is practically in the hands of the General Medical Council, which consists of persons chosen by various corporate bodies, some elected by the profession at large and a few nominated by the Privy Council. The constitution of a council composed like that must of course lead to very considerable diversity of opinion and the attaining of concentrated action must always be a difficult task until the constitution is altered by an Act of Parliament and rendered more homogeneous. With the best intentions the representatives of the various corporate bodies cannot divest themselves of the interests of their individual corporations in considering the general interests of the profession. To take the first of two cases in illustration a discussion arose in the past session on an important report furnished by the Dental Examination and Education Committee. In the first place let me digress to say that it is an intolerable grievance to the dentists of this country that they have no direct representation on the Council. They pay money (between £500 and £600 a year) to the Council, which spends that money as it wills, and yet they have no voice in that expenditure or to defend their interests. As a matter of elementary and constitutional justice the next vacancy among the Crown members should be filled by a representative member of the dental profession. Before the Council was a report which only touched the interests of five corporations, yet immediately there was roused an inter-collegiate dispute between a leading English corporation and the representatives of certain Scotch corporations, because the points at issue were not regarded sufficiently broadly and because the technical points involved were not handled by a specialist.

Such is of necessity the result of the present corporate representative constitution of the Council. The second illustrative matter is the evil of the preliminary examination. We all of us agree that the profession is suffering from what is called "overcrowding," but we do not all quite realise, I think, what overcrowding amounts to. It is, however, certain that part of what is called overcrowding could be prevented if we raised the standard of the preliminary examination. When the preliminary examination came up for discussion it appeared that although almost all the medical corporate bodies had given up this examination there remained two that had not. Naturally one would have thought that as nearly all the bodies had agreed on the point these two would have followed suit. But no, they held to them the more tenaciously this session than before because they said their preliminary examination is better than those held by their former competitors and than some of the examinations unfortunately still recognised by the Council, and this is undoubtedly the case. This question, however, carries with it a far larger one—viz., that of the one-portal system. It is clear that a one-portal system should be a complete series of examinations of absolute uniformity throughout the United Kingdom from preliminary to final and controlled by the central medical governing authority—namely, the General Medical Council. These examinations would confer upon the successful candidate the State qualification to be registered, carrying with it the title of doctor.

It occurred to Sir Christopher Nixon, the Representative of the Royal University of Ireland, that the simplest way of saving the time of the Council and the Education Committee in the matter of preliminary education and of clearing the ground would be to settle that the Council should hold its own preliminary examination. Recognising, however, that there might have to be some change in constitutional procedure Sir Christopher Nixon moved and I seconded a proposal that the Education Committee should inquire what steps would be necessary to be taken if such a proposition should be considered. Unfortunately the Council refused to inquire even into the matter. There is no doubt that the representatives of the corporations, who all voted against inquiry, felt that this was the thin end of the one portal wedge and that the diversion of the funds would cause the usefulness of the bodies they represent to diminish. This perfectly reasonable apprehension can, I think, be easily removed. The income of these corporations or guilds is spent practically on two objects besides maintenance of the offices and councils of the bodies. These objects are (1) the remuneration of examiners and (2) the maintenance of various public duties and trusts—e.g., the Hunterian Museum by the Royal College of Surgeons of England. The remuneration of examiners, however, will be provided as before, and proportionate contributions from the fee funds of the examinations would meet the second requirement, even if the Treasury were not persuaded to take its proper share in financially maintaining the efficiency of institutions carried on for the good of the State.

Though the motion was lost the discussion was by no means fruitless, for it revealed the promising fact that not a few of the corporate representatives are not averse to a one-portal system if applied to the final professional examination. I confess this seems to me to be beginning at the wrong end of the stick, but shall be satisfied if we can get that first as it will do a great deal towards removing many evils of which we now complain and will put an end to much disagreeable and internecine competition among the corporate bodies.

In conclusion I may say that the past session of the Council has been a useful one and the next six months ought to show a record of settlement of several crucial points in medical legislation.

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GENTLEMEN,—I need not impress upon you the importance of infant feeding or apologise for having selected this subject rather than a clinical demonstration on cases of interest in the wards of the hospital. Such sink into insignificance in comparison with the difficult problem I have selected. It is a problem which all of you are called upon daily, almost hourly, to solve and that being so I ventured to think that a practical demonstration on the subject would prove of sufficient interest and repay you for an omission which my medical and surgical colleagues will fill very worthily.

The natural food of an infant is of course the mother's milk and all healthy mothers should feed their infants from the breast. It is one of the greatest privileges of maternity to feed its young from its own body. A healthy mother who for the sake of the contour of her chest or because of the necessarily enforced abstention from gaiety passes her offspring to the care of strangers for its nourishment ought to be severely censured. Moreover, nursing is beneficial to the mother; it stimulates her uterus and is a great preventive of future harm to that organ. But just as it is so desirable that a healthy mother should nurse her offspring so it is most undesirable that a mother suffering from serious organic disease should attempt to perform that function. I would here mention phthisis and any tuberculous affection of the mammary glands as a contra-indication to nursing. Those in whom there is a strong family history of insanity had better not nurse their children—at any rate, nursing should not be carried to such an extent as to undermine the general health. The fact must never be lost sight of that the mind has a great influence for good and evil on the body of the mother and so on the production of milk. Emotional disturbances of all kinds are most harmful and may make the milk actually poisonous to the infant. The child should be placed to the breast as soon as the mother has recovered from the fatigue of the labour, say in three or four hours after her confinement. If there is no milk at first wait for a few hours until it is secreted placing the child at the breast every three hours. Do not give gruel; a little sugar-water may be given if necessary from time to time. As soon as the milk is secreted apply the child alternately to each breast even though a preference is shown for one only. The child during the first week should be suckled every two hours between the hours of 5 A.M. and 11 P.M. and only at fixed intervals. If the child be too weak and puny to take the breast then it will be necessary to feed it at frequent intervals by teaspoonfuls, using either a sterilised mixture of cream and whey or a peptonised humanised cow's milk or a modification of Dr. Gaertner's milk which I will presently mention. Cream and whey mixture is prepared as follows: ordinary cream (20 per cent.), 1 fluid ounce; whey, 2 fluid ounces; and sugar of milk, 1 drachm. This should be sterilised for half-an-hour. The whey is prepared by adding essence of pepsin to fresh milk, which is to be gently warmed. When the milk is set break up the curd quite small, allow it to settle, and then carefully strain it through several folds of muslin, finally squeezing the contained curd so as to extract all the moisture.

During the period of nursing several important problems will arise. For instance, should a mother continue to nurse when she again becomes pregnant? Assuming that the mother and child are healthy the child need not be weaned until the sixth month of pregnancy. Should, however, the double drain on the mother's constitution prove harmful to both of them, shown in the case of the child by gastro-intestinal disturbances, then weaning had better not be delayed. There is also just a possibility that the reflex effect on the uterus may lead to a miscarriage. Should any tendency to such a mishap be discovered then the child must be fed artificially. Another point for consideration is that menstruation sometimes causes gastro-intestinal disturbance in the infant said to be due to an increase of proteids in the milk. If this should occur give the infant a little boiled water before feeding and reduce the meat diet of the mother. But there are some mothers who are only capable of partially feeding their offspring. What should be done? The breast milk should be supplemented by Dr. Rotch's cream food or Gaertner's humanised milk or a modification of cow's milk previously determined by a chemical analysis of the mother's milk. If analyses of the mother's milk are decided upon it should be drawn off by the breast pump five minutes after the child has been placed to the breast.

When a mother from various causes is quite unable to suckle her child two courses are open to you—viz., the employment of a wet-nurse or the use of some modification of cow's milk. Of the alternatives nothing can compare with a healthy wet nurse if her milk is suited to the digestive peculiarities of the infant to be reared. The fact that the wet nurse should be strong and healthy and free from disease need hardly be dwelt upon or that a careful medical examination will be necessary before engaging her. She should be between twenty and thirty years of age and if the foster child is strong and vigorous a primipara may be selected, but should the child be weak and puny a multipara, as the milk will not be so difficult to digest. If her infant be strong and healthy this will be a point in her favour. She should not have been recently confined as the colostrum is undesirable. It will not be a drawback if there is a difference of two or three months between the ages of the children and in one respect it will be an advantage, as the wet nurse's child would have shown any symptoms of congenital syphilis by this time if the disease be present. Of course no syphilitic child can be allowed the advantage of a foster-mother. The treatment of the nursing mother and the wet nurse demands your careful attention. A plain mixed diet, with slight excess of fluids and meat above what she has been in the habit of taking, will be found ample. A small quantity of alcohol may be taken if she has been accustomed to it, otherwise it is unnecessary. Alcohol in small quantities increases the quantity of fat in the milk. Over-feeding and an excessive meat diet will make the milk so rich in proteids as to be quite indigestible. She should take exercise every day and seize every opportunity of being out in the fresh air. You must not lose sight of the fact that various drugs, some of them of a poisonous nature, pass into the milk and upset, or perhaps even poison, the child. Saline purgatives are not desirable as they are likely to stop the milk. The health of the nursing woman naturally requires attention and dyspeptic troubles or anæmia will necessitate the appropriate treatment. If a wet-nurse is selected she must not be allowed to visit her child, but the mother whose child she is nursing must make it her business to see that the child is properly cared for as an anxious, fretting wet-nurse will not produce good milk. No wet nurse should be allowed to dose her charge on any pretence whatever. The administration of opium is not unknown.

When should the child be weaned? The breasts, as you are aware, begin to fail at various periods of nursing, but no infant should be nursed longer than the first year even under the most favourable circumstances as rickets will surely result. When weaning has been decided upon it should be done by degrees, the artificial food selected gradually taking the place of the breast milk. The process should extend over a period of one month and at the end of that time the mother should send the child away or leave it for a few days. Do not wean a child when he is cutting a tooth and avoid, if possible, the very hot season of the year for fear of summer diarrhœa and postpone it if he has just recovered from a severe illness.

In the event of a mother being unable to nurse her infant, and in the absence of a wet-nurse, what artificial food can be recommended? There is but one answer to this question and that is cow's milk. Chemical analysis of healthy human milk shows that it is composed of the following constituents: fat,[1] 4 per cent.; proteids, from 1 to 2 per cent.; milk-sugar, 7 per cent.; salts, 0·2 per cent.; and water from 87 to 88 per cent.

[1] The percentage of fat according to Pfeiffer is 3·1 per cent., Adriance 3·8 per cent., Leeds 4·1 per cent., and Hoffmann 4 per cent.

Cow's milk, on the other hand, is formed as follows: fat, 3·75 per cent.; proteids, 3·76 per cent.; milk-sugar, 4·42 per cent.; salts, 0·68 per cent.; and water, 87·39 per cent. From the foregoing it will be seen that cow's milk is richer in proteids and salts but poorer in sugar, therefore in substituting cow's milk for mother's milk we always dilute with water to diminish the percentage of proteids which are so apt to produce indigestion. But in doing this we are diminishing the percentage of fat and making it still poorer in sugar. Hence arises the necessity for adding sugar and cream. But treat cow's milk in whatever way you will it is only a makeshift and cannot be made to exactly resemble mother's milk. Chemically the curd is different, it is not fully digested, it is also lacking an albuminoid which is present in mother's milk. We must not lose sight of the fact that the milk sold in cities is more often than not stale, that it contains many impurities, and is possibly contaminated with disease germs. Not only is this the case but many dairy companies use boracic acid or other chemicals to preserve the milk, in other words, that the consumer may be able to obtain it as stale as possible. Boracic acid is often added in such quantity as to make the milk unfit for infant consumption owing to the indigestion it produces. Apart from such contaminations and adulterations cow's milk differs enormously in composition according to the health of the animal, the time it has been in milk, and the quality of the food; hence the advisability of taking the milk from a mixed herd of cattle rather than from one cow, which was once the fashion. The milk of other animals can of course be used, but there is no advantage in this as their milk will require modification to imitate human milk. Milk as soon as it is received at the house should be placed in a clean vessel, filtered through absorbent cotton-wool to remove gross impurities, and then sterilised to free it from the various germs with which it is contaminated. A reliable apparatus for sterilisation is Alt's, which I now show you, and which has the merit of being cheap as well as effective. The milk should be sterilised in the separate bottles provided with this apparatus sufficient for the day's consumption at a temperature of 100° C. for a period of half an hour. After sterilisation the bottles must be kept in a cool place free from all sources of contamination. Each bottle is to be unsealed and an indiarubber teat affixed such as I now show you when the infant is about to be fed.

In out-patient hospital practice, as also in the poorer neighbourhoods, we frequently have to rely upon an unsterilised cow's milk suitably diluted with water so as to reduce the quantity of the proteids. A mixture of one part milk and two parts sugar-water, the latter of which is made by adding 1 oz. of milk-sugar to a pint of water, approaches human milk in composition but it is deficient in fat. The deficiency in fat can be remedied by adding 1 drachm of 20 per cent. cream to every ounce of the milk mixture, and failing this one-fifth of the quantity of cream in the shape of cod-liver oil should be given to the child. This mixture should be boiled for half an hour and when it is cool a one-twentieth part of lime water added to it makes the fluid slightly alkaline. Ordinary sugar may be used instead of milk-sugar if the proper proportion is observed. In private practice Rotch's Cream Mixture will be found reliable and very satisfactory. It is a near approach to human milk in chemical composition. For its preparation the ingredients are to be mixed as soon as they are received from the dairyman in the following proportions: cream (20 per cent.), 1½ fluid ounces; milk, 1 fluid ounce; water, 5 fluid ounces; lime water,[2] ½ fluid ounce; and milk-sugar, 3⅜ drachms. I will now call your attention to the method of preparation of Gaertner's humanised milk. The fresh milk mixed with an equal quantity of boiling water is placed in the centrifugal apparatus, a diagram of which—the Victoria Cream Separator—is now before you. The machine is revolved at such a speed that the outcoming streams become equal. From one spout pours all the cream and half the milk and water and from the other spout the remainder. The dirt remains in the machine. All the fat is thus obtained, half the proteids, half the milk-sugar, and half the salts. To bring the sugar to the required standard $5\frac{7}{10}$ drachms of milk-sugar are added to every pint of this mixture before bottling. It is then sterilised in the bottles I now pass round for your inspection which contain the milk ready for consumption. Should half the original proteids be still too large for the digestive capabilities the mixture before the sugar is added can once more be diluted with boiling water and again sent through the centrifugal cream separator, thus obtaining all the fat, a quarter of the original proteids, salts, and milk-sugar. In that case a larger quantity of milk-sugar will have to be added if the human milk standard is desired. The percentage of fat in the Gaertner milk is always kept at from 3·2 per cent. to 3·5 per cent. The casein of this milk when it is precipitated by the gastric juice curdles in a flocculent form in the same way as does mother's milk and not like indiarubber as is the case with cow's milk. I have made arrangements with Dr. Gaertner's London agents to dispense a sterilised milk mixture of any desired chemical formula on receipt of a medical man's prescription. The great importance of this will be readily recognised. It will enable you to feed your infant patients with an approach to scientific precision which has been hitherto unknown in this country. By means of this you can readily vary the quality of the food according to the digestive capabilities of the child. If you find that the proteids supplied in the humanised milk are still in too great abundance and induce gastro-intestinal disturbance all that will be necessary for you to do will be to send your prescription instructing them that your requirements are, say, 0·5 per cent. or 0·75 per cent. or 1 per cent. of proteids or any other percentage you may select in your milk mixture. In the same way you can regulate the quantity of fat in the shape of cream—in fact, select any percentage that may appear desirable should diarrhœa or vomiting from an excess of fat prove troublesome. On the other hand, if the fat supplied be insufficient for the requirements of your patient—for a deficiency of fat leads to anæmia and constipation—then you will be able to increase the quantity. The quantity of milk-sugar can also be regulated as required.

It has hitherto been the custom in cases of summer diarrhœa to withhold all milk and feed temporarily on albumin water, but Rotch, who was the pioneer of the Walker-Gordon milk establishments of the leading American cities, has found that if the fat is reduced to 1·5 per cent., the proteids to 0·25 per cent.–0·75 per cent., and the sugar to 4 per cent.–5 per cent., the milk agrees very well. For prematurely born infants the Gaertner milk can readily be adapted to their digestive capacities by reducing the proteids to 0·5 per cent. or perhaps a trifle less. Dr. Gaertner's agents at my request have consented to supply all the metropolitan hospitals, both out-patients and in-patients, with milk at cost price on receipt of a physician's order and doubtless they will be prepared to do the same with your patients should you deem the case worthy of such assistance.

Before leaving this subject let me tell you that the Gaertner milk is not sterilised to last indefinitely—it should not be kept for a long time. Full sterilisation makes the milk brown from caramelisation of the sugar and changes take place in the fat and sugar which make them indigestible. Further sterilisation does not destroy germs with absolute certainty, any bacteria that may be left are not necessarily harmless, and proliferating bacteria cannot always be recognised by signs of decomposition. Therefore sterilised milk should not be kept for too long a period but should be consumed as soon after sterilisation as possible. Sterilisation appears to rob milk of its anti-scorbutic properties, therefore infants who are being fed upon it require careful watching and any suspicion of the advent of scurvy must be combated by the ingestion of orange juice. The Walker-Gordon laboratories do not sterilise their milk unless compelled, the distances to be travelled determining this. They rely on ice for its preservation for twenty-four hours. There are several other humanised milks on the market, the oldest and best-known preparations being those of the Aylesbury Dairy Company. Lloyd, in the *Dairy* of March 15th, 1897, calls attention to some samples of some humanised milk. In one sample the fat was 1·1 per cent., in another 5·2 per cent., and the sugar 3·5 per cent., and he calls attention to even worse samples than these, one containing over 10 per cent. of sugar.

The question must frequently present itself to you as to whether barley water or oatmeal water or rice water should be added to milk. These waters certainly have nutrient worth and cause the curd to split up into finer particles and thus render it more easy of digestion. If eczema is induced by the use of these gelatin jelly may be substituted.

[2] The lime water is to be added after sterilisation.

Barley water may be added to Rotch's Cream Mixture instead of plain water if necessary. Prepare it as follows: Take two teaspoonfuls of barley meal and place in a clean jug. Pour on it a pint of boiling water, stand by the fire for an hour, stir frequently, and add a pinch of salt. The same quantity of oatmeal or ground rice can be used in place of the barley. These waters should be sterilised with the milk to which they are added.

Should milk be partially or wholly peptonised? As a temporary measure peptonisation of milk is beneficial. It should be reserved for cases where there is troublesome sickness or diarrhœa or the digestive powers are exceedingly weak and then only to tide the infant over illness. If it is persisted in the infant's gastro-intestinal glands will not develop properly and the seeds of dyspeptic troubles in after life may be sown in infancy.

This question also must frequently present itself to your minds, "What can be urged in favour of the use of condensed milk?" It does not "turn" quickly, the curd is digested better because it is not so thick, and it is convenient when travelling. The best brands are "The Milkmaid" and "The Viking," but to bring them up to the human milk standard it will be necessary to add a drachm of sterilised 20 per cent. cream to every fluid ounce of these when mixed with water. The former also requires one drachm of milk-sugar to every 1½ fluid ounces when mixed with water and one drachm to every ½ fluid ounce of the latter when so mixed. In both cases there is a loss of phosphate of lime salts. It has recently been ascertained that Swiss cows are tuberculous to a far greater extent than the cows of any other country—viz., 85 per cent. of all the cows. Swiss milk is, as you are doubtless aware, evaporated in vacuo and therefore not sterilised, consequently the tubercle bacilli are not destroyed. There are several dried milk foods on the market which have the advantage that they are small in bulk and their proteids are digested with greater ease. They are said to be sterile. No. 1 which I show you is a human milk imitation prepared from cow's milk. It is called "The First Food for Infants" and is recommended to be used during the first three months. No. 2, called "The Mother's Milk Food," stated to be for use from three to seven months of age, is prepared in the same way but contains in addition soluble starch derivatives and sugar, also albuminoids and salts extracted from whole wheat meal and barley meal. I pass round for your inspection Nos. 1 and 2 and also the solutions made from these according to the directions. Should either of these preparations agree the addition of fat may be found desirable and advisable in the shape of ordinary 20 per cent. sterilised cream, 6 drachms to every 6 oz. of the fluid, when prepared as directed, of either No. 1 or No. 2.

Mr. C. Drenckhan, of Stendorf, Germany, also succeeded in making what was apparently a perfect dried milk food. The German Navy patronised it, also private ship-owners, but unfortunately it would not keep as the albuminoids decomposed and the fat went rancid. No preservative had been added and it would appear from this that some chemical preservative is necessary to prevent decomposition in dried milk foods. Of course as long as they are kept dry germs cannot multiply in them. Whilst discussing all these methods of infant feeding now in vogue the scientific advantages to be obtained by the use of Gaertner's milk, or rather the modifications of the process I have related, must be sufficiently obvious to you, and I need hardly therefore advise you to adopt this process in preference to any other I have mentioned. Any system in this country which will give us equal facilities to our American *confrères* and enable the medical profession to supervise and control its infant dietetics should be welcomed, and the advent of the Walker-Gordon Laboratories in Great Britain would prove a positive boon. Such a system permits you to become responsible for the prescribing and ordering of the diet and not the advertising baby-food manufacturers who dictate to you in the most barefaced way as to the manner in which an infant should be fed. The alert food-monger has too long held undisputed sway in the nursery and it is high time that the bulk of the medical profession in England should wake up and relieve itself of what is a great opprobrium in the eyes of more advanced nations in this respect and for which from the generally lethargic attitude it adopts regarding infant feeding it is certainly responsible. It can only do so by taking an interest in this difficult subject and by being able to control at will the quantities of the important constituents of the milk which are known to prove a source of trouble in infant feeding. The gain to the infant world will be immense, the huge infant mortality will not be a crying disgrace as it is at present, and the value of the knowledge to be gained by the medical profession working in unison on scientific principles cannot be over-estimated.

The next question for our consideration is, How often should the infant be fed and what quantities of food should be given at each feeding? The quantity must be determined by the age, the weight, and the digestive powers of the infant. For the average infant the following table will be found a useful guide:—

Age.	Intervals of feeding.	Number of times in 24 hours.	Average amount each feeding.	Average in 24 hours.
1st week	2 hours	10	1 ounce	10 ounces
1st month	,,	8	1½ to 2 ounces	12 to 16 ounces
2nd month	2½ ,,	8	3 to 4 ,,	20 to 30 ,,
3rd and 4th months	3 ,,	7	4 to 5 ,,	30 to 35 ,,
5th and 6th months	3 ,,	6	6 to 7 ,,	34 to 40 ,,

The quantity of milk administered within these specified limits will depend upon the constitutional peculiarities of the infant and upon the previously mentioned factors, but the maximum amounts here advised should not be exceeded. The hours of feeding should be between 5 A.M. and 11 P.M. and punctually observed; if they are faithfully adhered to the child will wake crying at the regular times appointed for its meals.

A word about feeding bottles, an assortment of which along with various rubber teats I have just received from Paris and which I now hand round for inspection. The bottles supplied with Alt's steriliser can be recommended and the soft rubber teats accompanying them can be readily turned inside out and thoroughly cleaned. When cutting these do not make the orifices too small or the infant will not be able to suck properly and if too large will bolt the food and the inevitable will follow. The old boat-shaped bottle is good. Feeding bottles of this class compel the feeding of the infant by the nurse, the tendency to food-bolting is controlled, and the disgusting habit of placing the bottle in the cot with the child is prevented. It is hardly necessary to insist upon chemical cleanliness, therefore the use of bottles with internal indentations or those provided with tubes must be strongly condemned.

At the commencement of the seventh month, if the infant is still thriving, the modified cow's milk which has been found suited to the child, should be still continued, taking from 35 to 40 oz. in the twenty-four hours, and there need be no change of diet until ten or twelve months old. The child should be fed every three hours, the average amount at each feeding being 8 oz.—viz., at 8 A.M., 11 A.M., 2 P.M., 5 P.M., and 11 P.M. The digestive powers are now quite able to deal with well-cooked starchy foods if not given in too great abundance. Should the growth of the muscles, the bones, and the teeth prove slow, and the skull bones become softened, then it will be advisable to add cereals to the modified cow's milk. During the seventh, eight, and ninth months the weekly gain in weight should be from 3 to 3½ ounces and during the tenth, eleventh, and twelfth months from 1½ to 2 ounces. Increase in weight must not be looked upon as a certain guide because, as you are aware, rachitic children are often fat and clumsy. Any of the cereals may be given—viz., oats, rice, barley, wheat, or maize. The grains should be washed, then ground into a fine powder in a coffee-mill, and finally passed through a No. 80 sieve. Two tablespoonfuls of the meal to a pint of milk will make a suitable mixture. Great care must be exercised in the preparation of the food which, when thoroughly cooked for twenty minutes in a clean enamelled saucepan, should be placed in the separate bottles of the steriliser and after sterilisation removed to a cool place from which it can be fetched as required. Should the starch prove troublesome to digest at first it may be partially predigested by using an artificially prepared ferment such as Diastol, which is a reliable preparation.

The time at our disposal has unfortunately been short and

the importance and extent of the subject out of all proportion to such a time restriction. Much has been omitted that might have been mentioned and much only rapidly passed in review which merited greater attention. In spite, however, of the shortcomings I hope that what I have brought to your notice will prove of assistance to you in your practices.

ABSTRACT OF THE

Morison Lectures

ON THE

RELATION OF THE NERVOUS SYSTEM TO DISEASE AND DISORDER IN THE VISCERA.

Delivered before the Royal College of Physicians of Edinburgh on Nov. 1st, 3rd, and 5th, 1897.

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—A large proportion of the Morison Lectures have dealt with mental disturbances of the brain from the alienists' point of view and to special knowledge in this sphere I can lay no claim. A smaller proportion, however, have been concerned with the nervous system from the point of view of the anatomist, the pathologist, and the general physician, and it is with the latter that I feel I can most appropriately associate myself.

My attention has for some time been directed to the relation of the nervous system to disease and disorder in the viscera, partly on account of the admitted obscurity of the subject and partly because of the frequent opportunities presented to me in hospital and private practice of examining cases in which that relation has seemed, while obscure, to be nevertheless indubitable. I have concluded, therefore, that this subject might be worthy of more systematic examination and have some interest for others as well as myself. As the honorary secretary of the College was good enough to convey to me your wish that I should deliver the lectures for 1897 and 1898 I determined to deal with the matter in its more purely scientific aspects this year—namely, in its anatomical and physiological aspects—as distinguished from the bearing of these fundamental considerations upon the pathology and clinical phenomena manifested by disease and disorder of visceral innervation which I propose treating in the next series.

It would be impossible in the time at my disposal to enter with detail into the neural anatomy and physiology of all the viscera and were it possible it would be tedious to do so. I shall therefore endeavour to study the matter on representative lines so as to elucidate, however dimly, those principles which guide us in the rational discovery and treatment of disease affecting the organs which we conventionally term viscera. Before examining the anatomical relations of nerves to viscera however it may be of interest and not unprofitable to refer shortly to the *methods* suitable for their detection and examination.

For the examination of detail central and peripheral in the nervous system the use by Camillo Golgi in 1880–81 and by Santiago Ramon y Cajal in 1889 of the chrome-silver method has caused a revolution in our conceptions of the ultimate nervous system, a revolution which has been powerfully promoted by the adhesion to that method and of his own researches by its means into the minute anatomy of the nervous system by Albert von Kölliker, the revered *doyen* of European histologists, to whom some of us can offer the homage of pupils to their master. The Golgi-Cajal method is, notwithstanding its indubitable value, not an easy method of examination and this by their own confession, even in the hands of some who are justly acknowledged to be experienced and trustworthy histologists. The expression "quick Golgi method" is usually applied to that which does away with a preliminary hardening of texture in Müller's fluid for a week or two, but it might be more profitably used in connexion with the quickness necessary in the operations following the removal of the stained tissue from the nitrate of silver solution.

The method I have personally found most useful is that employed by Sihler, of Ohio,[1] and was brought to my notice by Dr. Frederick E. Batten who used it in the preparation of the specimens on which his recent valuable paper on muscle spindles was based.[2] The difficulty of staining the peripheral nervous system consists in its fineness and in its being surrounded by texture more or less dense. Stains appear to require application as directly as possible and with considerable potency to effect their purpose. Thus, while Ehrlich's intravenous injection of methylene blue stains peripheral nerves, Seme Meyer's subcutaneous injection of the same material, while it acts admirably on the central nervous system, is of little value for peripheral work. For this reason also Dogiel's direct application of methylene blue appears to act much better on peripheral nerves than the more indirect modes of using that stain which I have mentioned.

In using Sihler's method I made thin sections of the organs with Cathcart's freezing microtome, left them for a fortnight or longer in the stain, and in glycerine for an indefinite period. The longer they remained in glycerine the better I found the result to be, as the staining seemed to be continued in that medium and the tissue to become softer and more easily teased or squeezed. This I believe was also the experience of Dr. Batten. I am also under the impression that the stain and the medium (Farrant's solution) in which the preparation is mounted continues to define detail for a time after mounting. I am strengthened in this belief by a statement recently made to me in conversation by Dr. Lionel Beale that he had had the same experience with the glycerine-carmine method which he has so fruitfully practised.

For the detection of nerve-endings in muscle and for showing the relation of distal ganglionic cells to nerve trunks I found this method very satisfactory; but for the investigation of intercellular nerve-endings in secreting glands it was less successful in my hands. The profuse nuclear staining which results from the use of hæmatoxylin is a disadvantage in this respect and in the case of fœtal structures especially tends to obscure detail. I did not decolourise many of my specimens, as doing so seemed to me to render the detection of the finer nerves more difficult.

During the last decade our knowledge of visceral innervation has been greatly increased. The invisible was previously regarded as the non-existent in many organs which are now known to be richly endowed with nerves. The researches of Golgi, Ramon y Cajal, Kölliker, Gustaf Retzius, van Gehuchten, Sala, von Lenhossék, Ehrlich, and the Dogiels abroad and of Berkley and Sihler in America have done much to elucidate a dark field of inquiry. To our own countrymen we also owe much and before referring to later investigators it would be unpardonable not to acknowledge our indebtedness to Dr. Lionel Beale, whose position to-day is not identical with that of many histologists as regards the manner of nerve termination, but whose accurate observations have a permanent value. Gaskell, Langley, and F. M. Balfour, of Cambridge, have each by different methods rendered clearer to us a subject once the despair of anatomists, physiologists, and physicians alike, and the more recent work of Professor Paterson on the embryology of the sympathetic system has placed in a clearer light the original relation of the sympathetic to the cerebro-spinal system, a relation as influencing function to which I shall have occasion to refer again.

We may determine the character and course of a river by following it from its source to its outflow into the ocean or we may trace it from its distribution to its fountain head. In examining the innervation of the viscera I propose adopting the latter method. The stream of visceral innervation may in its ultimate distribution be likened to a delta with three mouths, these points being (1) the secreting cell; (2) the cell of involuntary muscular fibre; and (3) an intermediate or compound and more obscure condition, the innervation of the mechanism of metabolism and excretion.

The innervation of the secreting cell.—A. S. Dogiel, of Tomsk, in his paper on nerve-endings in the tear gland of

[1] Archiv für Anatomie und Physiologie, 1895, Physiologische Abtheilung, S. 202.

[2] Brain, Parts lxxvii. and lxxviii., 1897.

mammals[3] before proceeding to give particulars of his own investigations refers to the previous work of others with other glands as establishing a general identity of method in nerve distribution in secreting glands as a whole. Although some have figured what appeared to be nerve terminals on cells the general result of investigations hitherto has been that the actual termination in a cell has not been established. Even the apparent fine endings on or between cells Dogiel regards as due to incomplete staining of continuous nerve fibrils. He thus supports the well-known contention of Dr. Lionel Beale that apparent nerve-endings are a fallacious conclusion from imperfect observation, a view which is opposed to the opinion of the majority of histologists of the present day. Kölliker, on the other hand,[4] states that the penultimate plexus which is frequently observed ends free and that he is in a position to vouch for this fact in the case of intestinal villi, the spleen, the kidneys, the muscles of the intestinal wall, and the mucosa of gut. Gustaf Retzius also joins issue with Dogiel. He admits with Kölliker and others the occurrence of terminal plexuses, but not of terminal nets or loops.[5] The controversy between Valentin and Remak concerning the origin of nerve fibres is thus pushed by the discoveries of the intervening period to the extreme limits of the nervous system, and although it cannot even now be considered to be settled in favour of the terminalists the balance of evidence is on their side.

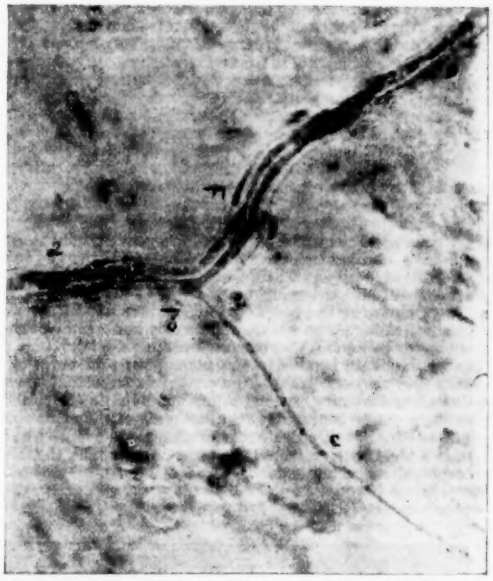
A point of great interest and one which it appears to me can only be determined by the method of induced degeneration is the discrimination of intra-glandular sensory or afferent fibres from the efferent secretory fibres proper. Sensibility is probably essential to all perfect vital action, but the execution of all peripheral functions, as will be asserted again, is in the sphere of the motor division of the nervous system, and to distinguish between these secretory motor fibres and intra-glandular sensory fibres by the microscope is not at present possible. These intra-glandular sensory fibres are not to be confused with others which cause increased discharges of secretion by gross reflex action. This may arise from the most distant stimuli—mental and other. The intra-glandular sensory fibres are nevertheless the afferent channels for the intrinsic irritability of the cell and necessary to the quiet and continuous elaboration of secretion characteristic of healthy gland tissue.

The innervation of the cell of involuntary muscle.—In the case of the voluntary muscle the motor end-plates or end-organs are well-defined bodies, and if the termination of the muscle spindle so well described by Dr. Batten be viewed with Professor Sherrington as the end-organ of muscular sensibility these also are no less well defined and are to all appearance ultimate and not penultimate structures. In the case of involuntary muscle on the other hand there is still room for controversy as to the nature of the ultimate innervation of the muscle cell. The difficulty of examining this question until recently has been so great that it is not long since histologists of repute regarded even so considerable a muscle as the cardiac ventricle as very sparsely supplied with nerves. Even now the "ganglion-free apex" plays a considerable *rôle* in physiological conceptions of the nature of rhythmical movement.

The Golgi methods have shown us, however, that not only is the cardiac ventricle well supplied with nerves, but that it is so richly supplied that there is reason to believe that ilka muscle cell, to vary the poet's language, has its ain twig o' nerve. This is the conclusion come to by Heymann, of Ghent,[6] who showed many beautiful specimens of the innervation of the frog's heart prepared by the quick Golgi method at the last meeting of the British Medical Association in London and which probably many present had an opportunity of examining. Numerous observations prior to and since his lend support to this view.

The end organs described as characteristic of cardiac muscle are knob-like bodies first observed by Krause and frequently seen since. What I have taken to be such, however, appear to me to be continuous rather than freely-ending structures and to be enlargements on the fine fibres of a circumfibrillar plexus similar to the circumcellular plexuses described by Dogiel in secreting glands. Terminal knobs it is true may be observed which do not appear to be continuous with any nervous element beyond them, but they so much resemble small enlargements upon nerve elements which are undoubtedly continuous with similar knob like enlargements in a continuous chain that the possibility suggests itself to me, as it did to Dogiel in the case of glandular

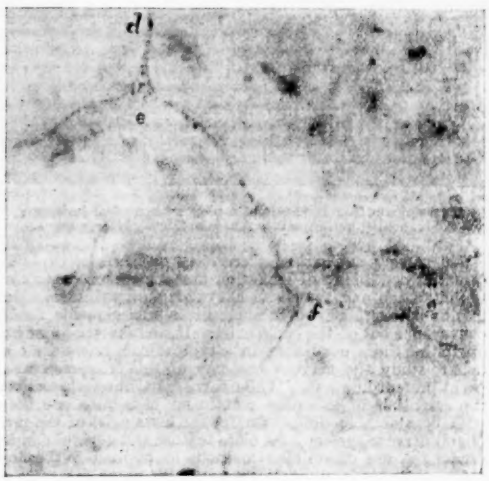
FIG. 1.



Nerve from the pelvis of the kidney of a mouse. *a*, main nerve; *b*, point of departure of *c*, the stem of a plexus; *n*, nucleus of investing sheath.

nerves, that defective staining may account for the apparently abrupt termination of some of the fibrils in some cases. The majority of present-day histologists, however, appear to be as convinced of the free ending of muscular nerves in all involuntary structures as they are of such a

FIG. 2.



Plexus in the pelvis of the kidney of a mouse arising from *c* in Fig. 1, of which *d* is the continuation; *e*, *f*, *g*, points of dichotomous division.

termination in the case of voluntary muscle. It is certainly difficult to conceive how otherwise the separate functions of nerve elements of which there is good physiological evidence can be secured.

[3] Archiv für Microscopische Anatomie vol. xlii., p. 632.
[4] Gewebelehre, p. 870
[5] Biologische Untersuchungen. Neue Folge, N. p. 50.
[6] Berlin Physical Society, Feb. 17th, 1893.

The discrimination by the microscope of motor fibres from more sources than one and of motor from sensory fibres in involuntary muscles is no more possible at present than it is to distinguish secretory motor from sensory fibres in glands. As regards the detection of sensory fibres in the case of such special sense organs as the Pacinian bodies of the mesentery and similar bodies which have been found in other organs—for example, the pancreas—we are justified in assuming that we are dealing with a sensory nerve termination. But no such guide to the detection of a sensory as distinguished from a motor nerve-ending is at present known in involuntary muscular fibre. If, however, we agree with Kölliker that a medullated nerve fibre found in the distant periphery is to be regarded as cerebro-spinal and sensory[7] we may have in this a guide to the penultimate distribution of sensory nerves in the viscera. Under the microscope and on the screen I have placed a specimen from the pelvis of the kidney of a mouse which shows the fine fibrils arising from such a fibre—a plexus the fine subsidiary divisions of which are countless, but which in view of the present opinion of the majority of histologists may be assumed ultimately to end free, as indeed at some points it appears to do in the specimen. (Figs. 1 and 2.)

In the case of the heart also similar plexuses with cellular or quasi-cellular points of dispersion may be observed coursing transversely across the muscle bundles. While these probably terminate parallel to the fibres giving off twigs to the cells they are conceivably from another source than some of those found running parallel to muscle fibres and terminating or appearing to terminate in the end-bulbs already mentioned. The importance of this double cardiac nerve-supply we shall have to deal with later. On the screen and under the microscope I show such plexuses. (Figs. 3 and 4.)

FIG. 3.

Nerve plexus from the heart of a mouse. *a*, nuclear junction; *b*, branching fibrils; *c*, intermuscular knobs; *d*, large nerve.

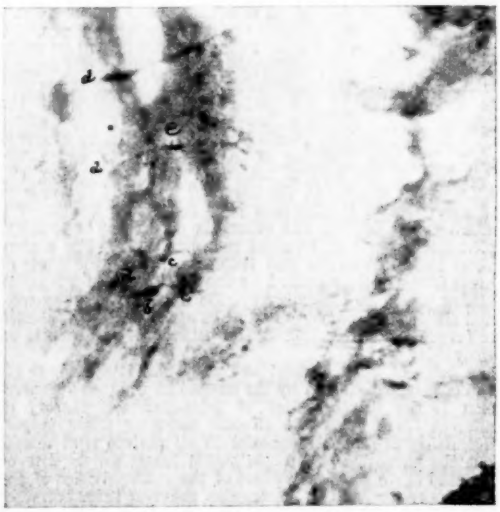
The nervous mechanism of excretion and metabolism.—The essential conditions of excretion are a medium containing the excretion and vessels to convey it to a point at which it is to be excreted, where appropriate arrangements for its conveyance out of the body exist. If we take the kidney as exhibiting these conditions in a typical manner we shall be able to study the nervous anatomy of this process so far as we at present know it. While this organ, however, exhibits the essentials of excretion mentioned it is also one beset with considerable difficulties for the histologist of the peripheral nervous system. Its close texture and general density render the use of staining methods as applied to the finer nerve elements a difficult matter. So great a master in histological methods as Gustaf Retzius recognised and acknowledged this difficulty and stated that even by Golgi's method the nerves of the kidney did not stain well.[8] He succeeded, however, in staining the vascular nerves as far as the glomerulus.

[7] Op. cit., p. 858.

[8] Biologische Untersuchungen, Neue Folge, p. 35.

A specimen which Professor Kölliker's curator gave me shows the vascular innervation of the kidney very well. I show it on the screen and under the microscope. He also found the organ difficult to stain by the Golgi method and

FIG. 4.



Plexus in the heart of a cat. *a*, *a*, non-medullated nerve fibres; *b*, nuclear body in plexus resembling a cell villi with dendrites *c*, *c*, and axis cylinder *d*.

did not succeed in doing so beyond the point reached by Retzius. A ganglionic cluster with fine retiform ramification of fibrils is shown in the preparation. The nerves in the case of the kidney as in other organs follow the course of the

FIG. 5.

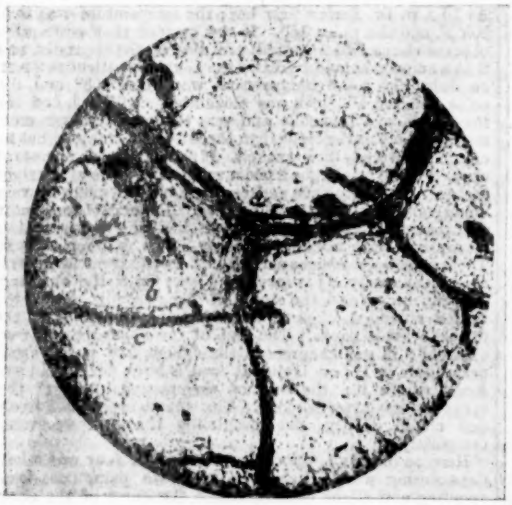
Showing relation of vascular (*a*) to nerve trunks (*b*, *b*) in the pancreas of a mouse.

blood-vessels. This relation of visceral nerves to blood-vessels is shown by the preparations which I throw on the screen. (Figs. 5 and 6.)

While we have thus failed hitherto, so far as I know, in demonstrating the complete innervation of the glomerular capsule and its connexions there can be little doubt that the nerves are there for staining and with improvements in methods will, sooner or later, be stained.

The question of special nerves of metabolism, like that of special trophic nerves, which may be appropriately mentioned in this place, must be left undecided at present. That diminution of the *vis a tergo* necessary to push through metabolism to its normal physiological limit is the cause,

FIG. 6.



Showing the relation of nerve trunk (*a*) and branch (*b*) to vessel (*c*). From the mesentery of a kitten.

rather than explosion of physico-chemical material, of the defective metamorphosis met with in some diseases is argued, I would suggest, by the commonly observed clinical phenomenon of deposits of uric acid in conditions of exhaustion in some persons who in more robust health exhibit the normal metamorphosis of urates. There is much more evidence in support of this view which we shall consider more fully in its proper place. There is also a good deal of clinical and some experimental evidence to show that the nervous system has a distinct local trophic influence, although the separate existence of nerves for this purpose has not yet been established. We have so far examined the extreme periphery of the visceral nerve distribution and found that while there are still noteworthy upholders of the non-terminal conception of the peripheral nervous system the balance of evidence and trend of histological opinion is in favour of the termination of the sensory and motor nerve supply of the viscera in free ends.

TWELVE CONSECUTIVE CASES OF ACUTE GENERAL PERITONITIS FROM INFECTIVE APPENDICITIS.

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THE proved dependence of very nearly all cases of iliac phlegmon, typhlitis, perityphlitis, and paratyphlitis upon infective changes in the vermiform appendix justifies the abandonment of these time-honoured terms and the substitution for them of the one word "appendicitis," barbarous as it may be in some ears. Of this protean infection it is necessary to recognise three forms. The mildest and happily the most common is a circumscribed plastic peritonitis, often called simple appendicitis. The next form, second in gravity as in frequency, is a circumscribed suppurative peritonitis or appendicular abscess. The third form of the disease, at once the most grave and the least frequent, is that in which the infective material escaping from the appendix into the peritoneum is not shut off there by any limiting adhesions; such cases are commonly spoken of as general appendicular peritonitis.

For cases of simple appendicitis no surgical treatment is required during the period of attack. An appendicular abscess should be opened as soon as the surgeon has evidence of the formation of pus. An appendix that is discharging infective matter into the general peritoneal cavity ought to be removed at the earliest possible moment. It is important to recognise a suppurative as distinct from a simple appendicitis and it is of still greater importance to recognise at once an appendicitis in which the diseased appendix is free in the general peritoneal cavity. It is as a contribution to this subject that I desire to record several cases that have recently been under my care. I give the cases in their chronological order with brief notes on each and I have included among them two cases (Nos. 4 and 6) of appendicular abscess in which symptoms of general peritonitis followed upon and overshadowed those of the abscess, and I have done so because the occurrence of general peritonitis puts them in the same category. The fact of perforation of the appendix has been used as a basis of classification for appendicitis, but it is easy to see that this is a mistake. Gross perforation of the appendix as a rule greatly aggravates the disease, but it is not by itself able to determine the issue of a case. I have known it attend a "simple" plastic appendicitis which did not lay the patient aside from her work for a single day. More often it leads only to a circumscribed abscess and only sometimes does it excite the widespread infection of the peritoneum, and when we remember that the grave inflammation follows upon the invasion of the peritoneum by the bacillus coli it is evidently of little moment to determine whether these organisms are passing through the inflamed walls of the appendix or through a hole in those walls. The issue of the case really depends upon the extent and intensity of the bacterial infection of the peritoneum and our classification should accord with the fundamental and not the accidental differences of the cases.

Confining myself to the cases in which the diseased appendix and the infective matter escaping from it are not shut off from the general peritoneal cavity by adhesions I think the following cases establish certain important practical points. 1. That there is considerable variation in the clinical course of these cases. The onset may be abrupt or more gradual and remittent; the symptoms may be most severe and rapidly fatal, or for a time so little marked as to deceive any but the most careful observer; fever may be high or altogether absent; vomiting may be the most prominent feature of one case and altogether wanting in another; intestinal peristalsis may be entirely arrested or the opposite condition—diarrhœa—may exist. 2. That there is just as marked a difference in the pathological course of events. An inflamed sloughing and perforated appendix may be surrounded by peritoneum which to the naked eye appears absolutely healthy (cf. Case 12), or such an appendix may be bathed in a small quantity of turbid, dark, stinking fluid, the remainder of the sac appearing normal (cf. Cases 1, 2, and 3). In another case there is an abundant sero-purulent exudation throughout the peritoneal cavity (cf. Cases 8, 9 and 11). In another the serous membrane is more or less widely smeared with buttery lymph (cf. Case 10); and lastly, around the diseased appendix there may be a quantity of pus indistinguishable from the thick, offensive pus of appendicular abscess, but unlimited by adhesions. 3. The urgent importance of early diagnosis and immediate operation and the hopefulness of early operations. Of these 12 cases, all of which were operated upon, 7 recovered; I think 3 of the fatal cases might have been saved if operation had been resorted to earlier (Cases 8, 9, and 11); Case 6 had apparently passed out of danger when the patient suddenly died from some unascertained cause; in Case 7 the age of the patient would have been a grave element of danger wherever the operation had been performed. The simple fact of 7 recoveries out of 12 cases amply justifies resort to operation. Dr. Herbert Hawkins, in his monograph on Diseases of the Appendix, speaks of operation for general peritonitis as uniformly unsuccessful. This statement requires qualification, but is only too true if

limited to those cases which have been allowed to run on for several days and where there is abundant sero-purulent effusion.

CASE 1. *Gangrene and perforation of the appendix; limited intra-peritoneal effusion; operation on fourth day; recovery.*—The patient was a robust and healthy man, aged twenty-four years. When living in the country and taking a great deal of exercise his bowels were quite regular; when he was in London and taking less exercise he was a little constipated. On April 25th, 1896, he went for a twenty-mile ride on a bicycle and thought he got a chill. During the night of the 27th–28th he had pain in the right side of his abdomen which he attributed to the chill. He got up, however, and went out, but during the afternoon of the 28th the pain came on worse and he had to lie down at his club; this relieved him and he was able to go out to dinner that night. On the next day, April 29th, the pain returned and Dr. Kingston Fowler saw him; he found his temperature was normal and that there were no definite local signs in the abdomen: the patient had previously taken a purge. Dr. Fowler ordered him some bismuth, to take only slop diet, and to rest in bed. That night the pain came on very severely indeed and he walked about all night in the effort to obtain relief. When Dr. Fowler saw him on the morning of April 30th he found marked tenderness and some fulness of the right lower quadrant of the abdomen; his temperature was then 101° F. He ordered four leeches to be applied over the right iliac fossa. At 6.30 that afternoon I saw him with Dr. Fowler; the temperature then was 102·2°, the pulse was 100 and full, and the tongue was very furred. The abdomen was a little distended, especially behind the lower half of the right rectus muscle; it was immobile and tympanitic. No lump was to be felt. There was acute tenderness at McBurney's point. The diagnosis of acute peritonitis starting from the appendix was made; as the leeches had only just been applied it was decided to wait a few hours to observe their effect. Next morning, May 1st, his condition was a little worse in every way, the temperature being 102·2°, the pulse 108, not so full; it was decided to operate. That afternoon I opened the abdomen over the cæcum and as soon as the peritoneum was divided from two to three ounces of very fœtid dark brown turbid flocculent fluid escaped. The appendix was found lying along the outer side of the cæcum and it was drawn out of the wound and removed. There were no peritoneal adhesions except one slight one between the ascending colon and the parietes. There was no more fluid in the general peritoneal cavity; there were patches of grey lymph on the cæcum and the coils of small intestine that were seen were injected but still polished. A tampon of iodoform gauze wrung out of carbolic solution was carefully packed all around the cæcum and the wound closed by buried and superficial sutures. The appendix was very turgid, of a deep purple colour, with four perforations in it with sloughy edges. When laid open it was found to contain three concretions and the whole of the mucous membrane lining it was gangrenous. Next morning, May 2nd, we found his temperature had fallen to 98·8°, the pulse was 90, he had passed flatus, and his abdomen was less tense; the pain was much better and there was no acute tenderness. For several days the patient was greatly troubled with flatulent distension of the stomach and colon, and soon after this was overcome he had symptoms of a thrombus in the right femoral vein. The wound suppurated moderately and healed firmly except for a stitch sinus; the stitch came away on July 13th and when seen on July 23rd he was enjoying excellent health and the local condition was quite satisfactory.

In this case the symptoms did not set in with that sudden acuteness that is so usually seen in this form of appendicitis. The inflammation of the appendix commenced in the early morning of the 28th, but peritonitis did not set in until forty-eight hours later, caused no doubt by the necrosis and perforation of the appendix. The infective material was discharged into the general peritoneal cavity and was not limited in its action by adhesions, but in spite of this the inflammatory effusion was at the time of the operation all lying just round the appendix and none was found in the pelvis or among the coils of the intestine; this same condition existed in Cases 2 and 3.

CASE 2. *Gangrene and perforation of the appendix; limited intra-peritoneal effusion; operation on fifth day; recovery.*—I was asked to see a girl, aged fourteen years, by Dr. Lendon on July 19th, 1896. He told me that his patient, a healthy girl was seized with pain in the centre of the abdomen about midday on July 15th. Soon afterwards she vomited and her bowels acted. He saw her shortly afterwards and examined the abdomen but detected nothing abnormal in it; the temperature was raised. This ill-defined pain in the centre of the abdomen, with vomiting about once a day and pyrexia, had continued up to the evening of the 18th. The bowels had acted naturally once each day; nothing had been felt in the abdomen on repeated careful examination. He had kept her quiet in bed on a liquid diet. In the night of July 18th–19th the pain which before had been of moderate intensity rapidly increased and became very intense and at 3 A.M. Dr. Lendon found her cold, collapsed, and in great pain; he gave an injection of morphia. At 10 A.M. Dr. Barlow saw her; the temperature was then 103° F. and the pulse 150. It was decided that perforation of some viscus had occurred, probably of the appendix, and that a surgeon should be called in. I saw the patient at 3 P.M. on July 19th; the temperature was then 103° and the pulse 150, the abdomen was moderately distended, and the lower half was immobile and very tender; there was more resistance under the right than the left rectus muscle, but no circumscribed swelling was felt. It was decided to operate at once. I made an oblique incision on the outer side of the right rectus. On opening the peritoneum about an ounce of very offensive turbid brown fluid escaped. I found the appendix bulbous-ended and hanging down into the pelvis. After separating some adhesions I drew it up and removed it. There were no adhesions shutting off any part of the general peritoneal cavity. I wiped all clean, drew the omentum over the cæcum and the stump of the appendix, closed the wound around a large rubber tube, and dressed with the double cyanide gauze. The end of the appendix was very enlarged; it was gangrenous throughout and had a small perforation in it; on laying it open a large concretion was found within it; the wall of the proximal part of the appendix was hypertrophied. The wound suppurated freely and closed slowly, but eventually the girl recovered completely.

Here, as in Case 1, there was a period of four and a half days during which there was moderate pain, occasional vomiting and slight pyrexia before the onset of the acute symptoms due to the infection of the general peritoneum. Although not shut in by adhesions the inflammatory effusion was all collected just around the cæcum and appendix.

CASE 3. *Appendix gangrenous and perforated; limited intra-peritoneal effusion; operation on fourth day; recovery.*—This patient, a boy aged five years, was under the care of Dr. Griffiths. On the evening of Dec. 1st, 1896, when apparently quite well he had a large meal of winkles, jam-tart, and bread. At 2 A.M., Dec. 2nd, he awoke with severe pains in his abdomen referred to the umbilical region, and soon afterwards vomited. For the next three days he was very ill with great pain, increasing distension of the abdomen, fever, vomiting, and constipation. On the morning of Dec. 5th he was seen by Dr. Cayley, who diagnosed perforative peritonitis and advised that a surgeon should be called in. I saw the lad the same afternoon (Dec. 5th)—the latter part of the fourth day of his illness—and found him very ill. His abdomen was very tense all over, immobile, very tender everywhere, and tympanitic except over a very narrow strip just above and internal to the right iliac crest. Nothing was to be made out by palpation; the finger in the rectum detected no tumour in the pelvis. His tongue was thickly coated with a white fur; he was frequently sick, the vomited matter being bilious in character. The bowels had acted twice since the onset of the illness and there was a frequent desire to go to stool, with ineffectual straining. The pain in the abdomen came on in frequent paroxysms. The temperature was high and the pulse was 126 and small; the hands and feet were rather cold. I regarded the case as one of general peritonitis from sudden perforation of the appendix and of almost desperate character, but advised immediate operation. I opened the abdomen by an oblique incision outside the right rectus muscle and as soon as the peritoneum was divided about four ounces of thin stinking sero-pus was spurted out. The appendix lay along the outer side of the cæcum and contained a large concretion; there was a large hole in the appendix on the proximal side of the concretion. The whole appendix was intensely inflamed and around the large perforation was a considerable area of necrosis. There were no adhesions in the general peritoneal cavity; the cæcum was very injected and flakes of lymph lay on its surface; the parietal peritoneum was smooth, glistening, and grey-pink in colour. There was no fluid in the pelvis.

The appendix was amputated and the wound was closed around a large rubber drainage-tube. His subsequent progress was satisfactory; the tympanites quickly subsided, the vomiting ceased, the bowels acted, and he made an uninterrupted recovery.

In this case the onset was absolutely sudden and seemed to have some relation to a large and very indigestible meal. As in the last case the inflammatory effusion, though not shut in by any adhesions, lay close around the appendix, and although the signs of general peritonitis were well marked it was unnecessary to do more than remove the appendix and cleanse the immediately adjacent parts.

CASE 4. *Appendix perforated; appendicular abscess; symptoms of general peritonitis; operation on sixth day; recovery.*—The patient was a man, aged twenty-three years, and was under the care of Dr. Downes, of Forest-gate. Five days before I saw him (Dec. 8th) he was seized with severe pain, at first felt around the umbilicus and later worse in the right iliac region. This was followed by vomiting, fever, absolute constipation, and rapidly increasing abdominal distension. I saw him on Dec. 13th, 1896, on the fifth day of his illness. His general condition was good; his facies was not abdominal. The tongue was moist, the pulse was 96, of good size and force, and the temperature was 99·8°. The abdomen was uniformly and extremely distended, "as tight as a drum," everywhere tympanitic, motionless, and by its distension it caused dyspnœa even when he was lying still in bed. The abdomen was everywhere tender to the touch. I diagnosed infective appendicular peritonitis and recommended operation. I opened the abdomen on the right side, found the intestines intensely distended but smooth, glossy, and free from lymph. On passing my finger to the back of the cæcum I found some soft adhesions and on separating these several ounces of blood and stinking pus escaped. In the cavity I felt the appendix almost severed by a very large ulcer (perforation). With the finger I tore it quite through and lifted out the distal portion which contained a large concretion. I wiped out the cavity as clean as I could and then closed the wound around a large rubber drainage-tube. I subsequently heard from Dr. Downes that this patient made an uninterrupted recovery.

This case differs materially from the preceding ones and some may consider that it ought not to be included in a series of cases of general peritonitis, for there was a large abscess behind the cæcum quite shut off from the general peritoneal cavity and the peritoneum where exposed was glossy and free from lymph. But from a clinical standpoint the case was indistinguishable from one of general peritonitis, with its great distension of the abdomen, loss of all abdominal movement and uniform tenderness. Whether his condition when I saw him was one of "peritonism" or of "peritonitis" I think no one can doubt that if left alone it would very soon have passed into a state of general peritoneal inflammation with a fatal termination. There was one feature of the case that was of very hopeful significance and that was his good pulse—under 100—and his bright cheerful mental state.

CASE 5. *Appendix gangrenous and perforated; limited intra-peritoneal effusion; operation on third day; secondary peritoneal abscess; fæcal fistula; recovery.*—A healthy, well-nourished girl, aged nineteen years, went to bed on Feb. 21st, 1897, feeling perfectly well; indeed, her friends had remarked that day how well she was. Her bowels had been acting regularly and she had taken only plain food, not in excess. She awoke in the early morning of Feb. 22nd with severe pain round the navel, then was sick and passed several motions, the first one formed, the later ones more fluid. Mr. Howard Barrett saw her at 12 noon of that day. She then seemed much better; the sickness had stopped, the pain was much less, and there was no marked abdominal tenderness or distension. A mixture of bismuth and soda was prescribed, with fluid food. In the early morning of Feb. 23rd the pain came on again very severely, with vomiting and when Mr. Barrett saw her at 7.30 A.M. she was evidently very ill. The temperature was 101 and the pulse 96. The abdomen was rigid and tender. One grain of opium was given and repeated at 12 noon when the temperature was 102°. At 5 P.M. the temperature had risen to 102·8°; the pain was less but the pulse was rather smaller. At 9.30 P.M. I saw her with Mr. Barrett. I found her lying on her side, with a good colour. She had just had one and a half hours' sleep, waking once with a spasm of pain. The tongue was a little furred. There had been no vomiting since midday. An enema had been given at 5 P.M. and had been retained. The abdomen was flat with rigid walls, the left rectus being as rigid as the right. There was movement in the upper half of the abdomen when she took a deep breath, but not in the lower half. She stated that the pain had been all over the abdomen and pointed to the upper part especially, but thought that then it was worse in the right iliac region. There was slight tenderness above the right groin but this was not at all marked. There was no swelling in this region. The liver dulness was normal. Nothing abnormal was detected by a rectal examination. Her last period—quite regular—had ceased a week ago. The temperature was 102° F. and the pulse 120. The diagnosis of acute appendicular peritonitis was made and it was decided that if her condition did not show a marked improvement next day an operation should be undertaken at once. She passed a quiet night with occasional paroxysms of pain; nothing passed from the bowel. On Feb. 24th, when Mr. Barrett and I saw her again, we found the lower half of the abdomen motionless and a little fallen; the whole abdomen was rigid and tender but both pain and tenderness were most marked at McBurney's point. The temperature was then between 101-102° and the pulse 120. We accordingly recommended operation and that evening, with Mr. Barrett's assistance, I opened the abdomen on the right side separating, not cutting, the muscles. I found the peritoneum was injected but still glossy. The appendix lay in the pelvis behind the ileum and about one and a half ounces of turbid and very offensive serum was lying around it and a large concretion was free in the pelvis; there were no peritoneal adhesions. The appendix was excised and the pelvis was wiped clean with sponges and the wound was closed around a large rubber drainage-tube. The proximal inch of the appendix appeared to be normal; beyond this was a narrow stricture of the lumen and the distal portion was dilated with a thin wall; the mucous membrane lining this dilated part was gangrenous and there was a large perforation of all the coats just on the distal side of the stricture. For the first two days all appeared to be going on well except that the temperature did not fall; then the patient complained of frequent paroxysmal pains, chiefly beneath the lower part of the left rectus muscle and the lower half of the abdomen remained tense and immobile. On March 7th there was a sudden profuse discharge of very offensive pus through the sinus. On March 10th, as the symptoms were unrelieved, an anæsthetic was given and with my finger passed into the wound I carefully broke down adhesions and eventually opened into an abscess cavity behind and above the pubes; this was washed out and drained. After this she slowly improved, the discharge lessened, and all symptoms of peritonitis disappeared. Unfortunately a fistulous communication formed with the cæcum, which delayed the healing of the wound. By the end of May the wound was firmly healed except for a pinhole fistula through which a minute bubble of gas occasionally passed.

The first noteworthy points in this case were the misleading improvement which followed spontaneously not only upon the first abrupt and severe onset of the symptoms but also upon the recurrence of acute symptoms twenty-four hours later. This led to an unfortunate postponement of the operation; had I operated when I first saw her I think this patient would have made a much more rapid and satisfactory recovery. For although at the operation there was no evidence of widespread infection of the peritoneum the subsequent course of the case showed that this had taken place. Case 10 is another example of a large abscess forming subsequently to an operation for general peritonitis. The explanation of such cases is that at the primary operation some outlying part of the peritoneal cavity is not cleansed and whilst it quickly gets shut off from the drained area by adhesions, behind these adhesions acute suppurative inflammation ensues. Such an abscess may burst into the drainage tube track if the separation between the two is slight, but if the separation is more extensive such a happy result is very unlikely to occur and the abscess if unopened by the surgeon may burst into a viscus or externally. These secondary abscesses should be opened as soon as ever their presence is recognised.

CASE 6. *Appendicular abscess; symptoms of general peritonitis; operation on the seventh day; progress satisfactory for six days, then sudden pain and collapse; death on the fourteenth day.*—This patient, a youth aged nineteen years, was seen in consultation with Dr. Wise, of Walthamstow. The lad had a severe attack of appendicitis in 1895 and subsequently three or four trifling recurrences. On Feb. 20th,

1897, when apparently quite well he was suddenly seized with severe pain in the abdomen followed by vomiting. Dr. Wise saw him next day and recognised the condition as acute appendicitis. On the 22nd the patient was worse with a temperature of 103° F. I saw him on Feb. 26th; he was then suffering great pain in his abdomen which was considerably and uniformly distended, motionless, rigid and tender. The percussion note was everywhere tympanitic except in the right iliac fossa where it was dull. The temperature was 101° and the pulse 108. The diagnosis arrived at was appendicitis with general peritonitis and an abscess in the right iliac fossa. I opened the abdomen on the right side; the small intestine was intensely injected, but the cæcum was empty and paler in colour. Behind and on the inner side of the cæcum was an abscess which I opened with the finger and let out about two ounces of very fœtid sero-purulent fluid. The appendix was lying in the wall of this abscess; it was drawn out of the wound and excised; after cleansing out the cavity the incision was closed around a large rubber drainage-tube. On March 4th Dr. Wise wrote to me: "He seemed to be going on very well until this morning. ..... His temperature had dropped to normal and his pulse was 80. He complained a good deal of flatulent distension. The wound looked well; there was a fair amount of discharge through the tube, which had on one day a bad smell. Last evening he had sharp pain in the abdomen and his pulse went up to 120, but his temperature was still normal. He died about four o'clock this morning. He was quite conscious till the last and did not vomit again. His bowels acted twice on the morning of Feb. 28th very satisfactorily." There was no post-mortem examination.

This case disproves the statement sometimes made that in recurrent appendicitis the successive attacks tend to become less and less severe. It is greatly to be regretted that the appendix was not excised in 1896 after the first recurrence. In the absence of a post-mortem examination it is impossible to state the exact cause of death; the fall of temperature to the normal, and particularly the normal pulse-rate, were taken to indicate an absence of peritonitis and of a second abscess.

CASE 7. *Appendix perforated; limited suppuration in the pelvis; persistent vomiting; apyrexia; operation on the third day; death.*—A woman, aged sixty-eight years, was under the care of Mr. Farnell, of Eastbourne. She was a delicate, "nervous" woman who had been in particularly good health just before the present illness, her only trouble being sluggish action of the bowels which was easily corrected by a small dose of aperient medicine. She had a good motion on the morning of March 5th, 1897; she went to bed very well that night, but soon woke up with acute pain across the abdomen and was sick. After a time she sat up in bed and then the pain became very severe. Mr. Rook saw her at 4 A.M. on March 6th and prescribed a dose of opium to be followed by a Gregory's powder. At 9 A.M. Mr. Farnell saw her; the abdomen was then full and tender; she was vomiting and the pain continued; the temperature was normal. As nothing was passed by the bowel a dose of calomel was given at night followed by castor oil and an enema in the morning, but all to no purpose; neither motion nor flatus was passed and the sickness persisted. These symptoms continuing unrelieved I was asked to see the patient on March 8th. I found she was not collapsed; there had been no rise of temperature all through the illness; the thermometer then registered 98·6° F. and the pulse was 100; the tongue was clean and moist. The abdomen was full, especially in its lower half, and tympanitic; its walls were not rigid although there was tenderness over the lower part—not more in one part than another. There was very frequent vomiting—the nurse stated that she had been sick "dozens of times that morning." The vomited matter was brown in colour, watery, offensive, and alkaline. Neither fæces nor flatus had been passed. The rectum was ballooned, but nothing else abnormal was felt from it. Gas and other were administered and I opened the abdomen just to the right of the middle line. On passing my finger down into the pelvis on the right side, without breaking down any adhesions, some very offensive thick green pus welled up. I then delivered and excised the appendix; it was a long one and lay right across the pelvis. It was a long appendix with a very fatty mesentery; in its tip was a perforation. The pelvis was carefully sponged out and the wound closed around a tube. She died forty-eight hours later. In a letter written by Mr. Farnell on March 18th he says: "She was quite free from sickness and pain for six hours after the operation, then the vomiting recommenced and became constant, along with symptoms of complete obstruction. I have no doubt there was severe general peritonitis" (Farnell). No post-mortem examination was made.

The special interest in this case lay in its resemblance to a case of acute intestinal obstruction; the apyrexia, the very frequent vomiting, and the absence of all passage of fæces and flatus formed a picture more suggestive of intestinal obstruction than of a sudden perforation of the appendix with pus free in the peritoneal cavity, and the age of the patient—sixty-eight—was also more compatible with such a view. The pus evacuated was in odour, colour, and consistence just like that commonly found in a circumscribed appendicular abscess and was totally unlike the sero-purulent fluid met with in general perforative peritonitis. The operation failed in freeing the peritoneum from infective material and did not succeed in averting death.

CASE 8. *Appendix gangrenous, perforated; general sero-purulent intra-peritoneal effusion; operation on the third day; death.*—This patient was a very strong, healthy, muscular man, aged twenty-five years and single. He had always had his bowels open twice a day. He had often had pain in the right side of his abdomen at night, but had never paid any attention to it or been laid up by it. On March 18th, 1897, he returned home in the evening feeling "not quite the thing" and went to bed. He woke up about 2 A.M. with acute pain in the abdomen and was sick. A few hours later he was seen by Mr. Savery who found he had pain and tenderness in the right iliac fossa. Next day he was worse and as nothing had passed from the bowel an enema was given; this caused great pain and was returned without motion or flatus. The following night was a very bad one with severe pain and vomiting, and on March 21st I was asked to see him with Mr. Savery. I found him with a normal temperature (there had been no pyrexia all through) but a pulse of 130, small and of low tension. His tongue was dry with a thin fur; he had vomited three times during the day, the vomited matter being abundant, bilious, and not offensive. His abdomen was distended especially in the lower half and very tender just below the navel and in the right iliac region; the abdominal wall was immobile and the recti muscles were rigid. I could not feel any localised swelling and the whole abdomen gave a tympanitic percussion note. Micturition was frequent but painless; the urine was scanty and loaded with urates. The diagnosis of general peritonitis from infective appendicitis was made; his condition was considered to be very grave but it was decided to operate. I opened the abdomen on the right side; the peritoneal cavity contained a large quantity of offensive sero-purulent fluid and flakes of lymph were seen over the cæcum. There were no intraperitoneal adhesions; the intestines were distended. The appendix lay behind the cæcum; it was excised and then the peritoneal cavity was well flushed out with warm boiled water and the wound closed round a glass drain passed into the pelvis. Two concretions were removed from the peritoneal cavity, one the size of a large date-stone, the other much smaller. The appendix at its cæcal end was normal; about its centre was a large perforation at least an inch long, with sloughy edges, on the side opposite to the mesentery. On laying open the appendix the mucous membrane lining the distal four-fifths of the tube was necrotic. Unfortunately the operation was not followed by any improvement in the patient's condition; the bilious vomiting continued, the pulse gradually became more frequent and running in character, and death closed the scene next morning seventeen hours after the operation.

This was a typical case of "fulminating appendicitis," the form of the disease least amenable to treatment. The absence of fever all through the illness is especially noteworthy; this was both a misleading and an unfavourable sign. Had operation been resorted to at the very commencement of the attack or at any rate within twenty-four hours of the onset of acute symptoms it might have been successful.

CASE 9. *Appendix acutely inflamed; abundant sero-purulent peritoneal effusion; operation on fourth day (?); death.*—The patient, a man aged forty-two years, was under the care of Dr. Clabburn. He was a stout, active, but very gouty man. Three years previously he had had an acute inflammatory attack on the *left* side of the abdomen with the formation of a lump as of a left-sided appendicitis; from this he entirely recovered and all traces of the swelling had disappeared. He was in his usual good health until March 14th,

1897, when he experienced some abdominal pain which he could not distinctly localise; his medical attendant ordered him to keep his bed, to take only liquid nourishment, and not to take a purgative. By March 18th he was practically well. That night, as an enema had not acted sufficiently, he took a cascara pill which acted next morning (the 19th) and very quickly after this he was seized with pain in his abdomen so agonising that Dr. Clabburn not only gave him morphia under the skin, but administered chloroform until the morphia had time to act; soon after this he had a rigor, his temperature running up to 105°F. On March 20th chloroform was again given for the intense pain; the temperature was 103°. On March 21st the pain continued and half a grain of morphia was injected twice; his bowels acted; all this time there had been no sickness; his pulse was now 120 and running in character. I saw the patient about midday on March 22nd; he expressed himself as having been much easier during the last few hours; his tongue was clean and moist, his pulse was 132, soft and running, and his temperature was 98·4°. His abdomen was considerably distended; the muscles were rigid and immobile; there was great tenderness in the right iliac region much more than anywhere else; the note was tympanitic all over, but the liver dulness was not obliterated. The rectum contained fæces; nothing special was felt in the pelvis. The diagnosis of acute septic peritonitis starting probably in the appendix was made and although the patient's condition as showed by his pulse was a very grave one it was decided to operate. Ether was given by Dr. R. A. Farrar and I opened the abdomen over the appendix and immediately a quantity of stinking thin sero-purulent fluid escaped, the very fat omentum was acutely inflamed, and dirty grey lymph was smearing the cæcum; the appendix lay behind the cæcum and was excised; there were no intra-peritoneal adhesions. The abdomen was washed out with hot boiled water, sponged clean, and then the wound closed round a large glass drain. The patient bore the operation well, did not vomit, and was not collapsed after it. An hour later 10 c.c. of anti-streptococcic serum was injected under the skin of the epigastrium. Two hours later he was quite comfortable and free from pain, his pulse was fuller, his extremities were warm, and his face was of a good colour. The appendix was covered with lymph, not perforated or gangrenous, and no concretion was within it, but the mucosa was acutely inflamed. Next day there was some slight improvement and on the 24th the pulse was once as low as 80; that evening an enema was given and a copious stool was passed; the tympanites increased, however, black vomit set in, and quite early on the morning of March 25th he sank and died. No necropsy was made.

CASE 10. *Appendix gangrenous; buttery lymph on the peritoneum; operation on fourth day; secondary peritoneal abscess; recovery.*—A boy, aged fifteen years, was admitted to Middlesex Hospital on March 18th, 1897. The history of the case was that on March 7th he was seized with pain about the navel and in the right iliac fossa, but this was not severe enough to lead him to go to bed until March 15th, when it became very acute. During that day also he had three rigors and was sick; on the 16th he had another rigor and as his pain continued and he was obviously worse he was sent to the hospital. On admission I found him to be a delicate boy, evidently very ill, with pale face and anxious, pinched expression. The abdomen was distended and immobile, very tender all over, but most so over the right iliac fossa; there was no tumour to be felt through the abdominal wall; the rectum was found to be full of fæces and no proper examination of the pelvis could be made. The liver dulness was not obliterated. His temperature was 100·4°F. and the pulse was 130. The tongue was dry and furred. I diagnosed a gangrenous appendicitis and peritonitis not limited by adhesions and had the boy taken to the operating theatre at once. I opened the abdomen on the right side and found the intestines hyperæmic and covered with flakes of lymph. The appendix was found hanging down into the pelvis and when it was raised a quantity of sero-purulent fluid welled up from the pelvis. There were no intra-peritoneal adhesions. I put a ligature around the base of the appendix and removed it a quarter of an inch from the cæcum; it was a little dilated, acutely inflamed, and at one spot gangrenous; there was no concretion within it. The peritoneum was flushed out with sterilised water and a large glass drain was passed down into the pelvis. During the next three days the temperature gradually fell to under 99° and his pulse to under 100. There was no sickness, but the distension of the abdomen continued and stinking blood-stained serum was withdrawn through the tube. On March 25th the temperature began to rise and continued at about 101° till the 30th. On March 26th tenderness and pain were complained of in the left iliac fossa and a patch of dulness was found there. By March 30th this had increased and fluctuation was felt, so on that day an incision was made just below the tenth left rib and a collection of pus around the left colon was evacuated and drained. After this the boy gradually improved and he left the hospital on April 28th at the request of his father who was very anxious to have him home. I have since heard that he made a perfect recovery and is now strong and well.

This case resembles Case 2 in the long period that elapsed between the first onset of pain and the development of the acute symptoms. The repeated rigors were an unusual symptom. The changes in the appendix were not so extensive as in many of the cases; this may be connected with the absence of a concretion. At the time of the operation there was well-marked general peritonitis. As in Case 5 the flushing failed to cleanse one part of the serous sac and an abscess subsequently developed in the left loin and iliac fossa. Although the boy recovered, his convalescence was slow and this, I think, is always the case where peritonitis has advanced before operation so far as in this case.

CASE 11. *Appendix gangrenous and perforated; abundant sero-purulent effusion; operation on the fourth day; death.*—The patient, a lad aged fifteen years, was quite well on July 3rd, 1897, and started off for a ride on a bicycle, but he returned soon because he felt "poorly." Next day, however, he was quite well and on July 5th he had a long ride on a bicycle and made his dinner off buns. On July 6th he was sick all day, his bowels acted four times before noon, and towards night he had pain in the cæcal region. On the morning of July 7th he was seen by Mr. Rook, of Eastbourne; the temperature was then 101·4°F., the pulse was 88, and the respirations were 22; the lad complained of pain over the cæcum, the abdomen was full, with very little respiratory movement; there was great tenderness just above the right groin and up towards the navel; Mr. Rook was unable to feel any definite swelling. The patient passed a quiet day, with less pain and no sickness; nothing passed from the bowel; at night his temperature was 103°, the pulse was 108, and the respirations were 25. The night, however, was a bad one; he had but little sleep, was repeatedly sick, and next morning (July 8th) Mr. Rook found the abdomen fuller, the temperature 99·4°, the pulse 92, and the respirations 24. He continued to vomit all that day and nothing passed from the bowel; at night the temperature was 100·4°, the pulse was 90, and the respirations were 25. I saw the patient at 6 P.M. on July 9th. His abdomen was tense and motionless and tender all over; he had been repeatedly sick during the day, the vomit being bilious in character. His pulse was 130, small and compressible. We diagnosed general peritonitis from a perforated appendix and regarded his condition as very grave indeed, but advised operation as affording a slight, and the only, chance of recovery. I opened the abdomen over the appendix and at once a large quantity of foul sero-purulent fluid escaped. There were no adhesions in the general peritoneal cavity. The appendix was acutely inflamed and presented at its extremity a large sloughy perforation; its lumen was full of very foul thick grey pus. I put a ligature around its base and excised the appendix. I then washed out the whole peritoneal cavity with warm sterilised water and brought away a considerable quantity of pus. I left two glass drains in the peritoneal cavity. Soon after he was returned to bed he vomited; his extremities were cold; he had a quiet night with much less sickness, but became very delirious next morning and died rather suddenly twenty-two hours after the operation.

At the onset of the disease in this case there was diarrhœa for a few hours and more than the usual amount of sickness, but there was no pain; this is the only case of the series in which pain was not present at the outset. Throughout the case vomiting was very frequent and being associated with absence of all passage from the bowel after the first few hours, and gradually increasing distension the case was one of those liable to be mistaken for intestinal obstruction. In several of its features it resembles most closely Case 8; in each case operation was resorted to too late to be of avail.

CASE 12. *Appendix gangrenous and perforated; no lymph or fluid in the peritoneal cavity; small extra-peritoneal abscess; operation on the third day; recovery.*—The patient, a boy aged ten years, was admitted to Middlesex Hospital on Oct. 20th, 1897. He seemed to have been quite well until

2 A.M. on Oct. 18th, when he awoke with pain in his abdomen, vomited several times, and passed a loose motion. Dr. Wheeler saw him in the evening of that day and found his temperature 101° F. and the boy complained of much pain and tenderness in the cæcal region. All next day (Oct. 19th) he continued in pain and suffered from nausea; his temperature rose to 103°. On the afternoon of Oct. 20th it rose to 104° and as the boy was obviously worse he was sent to the hospital. On admission he was found to be a thin pale lad, evidently very ill, with a pained, anxious expression; the temperature was 103·6°, the pulse was 130, and the respirations were 36. The abdomen was rigid and did not move in respiration; its lower part was somewhat distended. The whole abdomen was tender, but the tenderness was very acute in the right iliac region; the boy also pointed to the right loin as a very painful part. The rectum was full of fæces and nothing could be felt through it. I could not make out any distinct lump in the cæcal region. I regarded the case as one of acute inflammation of the appendix with perforation and infection of the general peritoneal cavity, and determined to operate at once. When the anæsthetic was given the abdomen became much flatter and softer and then a very slight swelling or sense of fulness could be made out over the cæcum. I made an incision two inches in length through the skin and superficial fasciæ and split the three abdominal muscles and divided the transversalis fascia. The subserous fascia was very œdematous and on picking through it a bead of pus appeared at the outer part of the wound. On following this up I opened a small abscess which held about two drachms of thick indol-smelling pus and lay entirely outside the peritoneum and behind the cæcum. This was washed clean and then the peritoneum was divided. The appendix was exposed, lying to the outer side of the cæcum; it had a very short mesentery and was entirely intra-peritoneal; its distal half was intensely inflamed, its proximal half was dilated and filled with offensive pus, and the mucous membrane lining it was gangrenous. There were three perforations of the appendix. I ligatured the appendix close to the cæcum and cut it off close to my thread. There was no lymph or pus in the peritoneal cavity and the cæcum was not injected. There were no adhesions around the appendix which lay quite free in the general peritoneal cavity. Two tubes were placed in the wound—one in the peritoneum and the other in the abscess cavity. The boy made a very good recovery. On Oct. 25th the peritoneal tube was removed, and the other one the next day. Although the sloughing of the appendix appeared to extend quite up to the cæcum no fæcal fistula formed and the lad left the hospital with the wound soundly healed in November.

I have included this case in my list because, as in most of the others, an acutely inflamed, gangrenous, and perforated appendix lay free in the general peritoneal cavity not shut off by any limiting adhesions. Clinically it resembled exactly several of the others, especially Cases 1, 2, and 5. Pathologically, however, it stands alone, for around this perforated and sloughing appendix there was no inflammatory effusion, but a clean dry peritoneum; while, on the other hand, there was a small extra-peritoneal abscess. In this fact lies the chief interest of the case. All now recognise the intra-peritoneal origin of perityphlitic abscesses. Thus Treves[1] writes: "Abscesses resulting from mischief in the cæcum or appendix are primarily intra-peritoneal and are encysted forms of suppurative peritonitis. Inasmuch as the cæcum and vermiform process are normally entirely surrounded by serous membrane any inflammation extending from them must first implicate the peritoneum." Dr. H. P. Hawkins in his "Diseases of the Vermiform Process" adopts the same view, but admits that it is "possible for an extra-peritoneal suppuration to arrive from disease of the appendix" either from extension of the necrosing process through the peritoneum which covers the iliacus muscle or "when the appendix is adherent to the iliacus peritoneum a perforation of it on the adherent side may lead directly to inoculation of the retro-peritoneal tissue, so that a large abscess may form in the iliac fossa with little or no affection of the peritoneum." My case is peculiar because the extra-peritoneal abscess was not formed in either of these ways: the appendix was not adherent anywhere, nor was the iliacus peritoneum inflamed, much less perforated. The condition of the parts at the operation was so plainly seen and so distinct that I think I am entitled to say that in this case there was no error of observation such as explains the older records of extra-peritoneal perityphlitic abscess. The explanation of the fact I think is this, the lymphatics must have carried away all the infective material so rapidly and completely that no development of bacilli coli could take place within the peritoneal cavity, but in the lymphatic plexuses outside the peritoneum the bacilli accumulated multiplied and excited suppuration. In other words the scavenging of the peritoneum was too perfectly effected for inflammation to occur. In support of this view is the fact that in spite of the presence of an appendix with three perforations in it no escaped matter and no exudation of any kind was found around it. A somewhat analogous condition is quite commonly met with in secondary infective abscesses in other parts when a more or less extensive area of healthy tissue intervenes between the point of inoculation and the secondary abscess in the cellular tissue.

The cases, I hope, tell their own story and I need add but little to the brief comments on each. Pronounced vomiting was a very marked symptom in two of the fatal cases (Cases 7 and 8) and was not a troublesome symptom in any of those that recovered. I regard frequent vomiting as a very grave symptom; it is generally recognised as a sign of affection of a wide area of the peritoneum.

The mode of cleansing the peritoneal cavity should be varied with the conditions found at the operation. If the effusion is limited to the immediate neighbourhood of the appendix careful and gentle wiping with a sponge is the best means to employ, but where a more general effusion is found a thorough flushing out of the cavity with a sterilised and non-irritating fluid is the best method. I prefer a drainage-tube to a gauze tampon. Glass tubes are certainly not indispensable and are only superior to rubber tubes in those cases in which the pelvis has to be drained. Rubber tubes should certainly be used for draining the iliac fossa. I prefer a single large rubber tube to two of smaller calibre.

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[1] The Surgical Treatment of Perityphlitis, second edition, p. 22.

CONSUMPTION, A "FILTH DISEASE."[1]

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SIR JOHN SIMON, in his admirable account of the class of complaints which he brands as "filth diseases," attributes them mainly to two "gigantic evils" in the sanitary government of England: "First, the omission (whether through neglect or through want of skill) to make due removal of refuse matters, solid and liquid, from inhabited places"; and, "second, the licence which is permitted to cases of dangerous infectious disease to scatter abroad the seeds of their infection." He calls attention especially to the class of "diarrhœal" diseases, such as diarrhœa and dysentery, cholera, and enteric fever, and he regards the last-named as "the very type and quintessence" of all the diseases which are attributable to filth. He says: "Though sometimes by covert processes which I will afterwards explain, yet far oftener in the most glaring way, it apparently has an invariable source in that which of filth is the filthiest; that apparently its infection runs its course, as with successive inoculations from man to man, by the instrumentality of the molecules of excrement which man's filthiness lets mingle in his air and food and drink."[2] "There are houses, there are groups of houses, there are whole villages, there are considerable sections of towns, there are even entire and not small towns, where general slovenliness in everything which relates to the removal of refuse matter, slovenliness which in very many cases amounts to utter bestiality of neglect, is the local habit" (p. 463).

Phthisis is not included in the list of "filth diseases" and the omission was certainly intentional; for whilst Sir John Simon admits that foulness of air due to non-removal of the volatile refuse of the human body is strictly within the physiologist's definition of filth, yet for the purpose of the report the question of overcrowding is set aside as distinct and the word "filth" is used only in that sense which

[1] A paper read at a meeting of the Bournemouth Medical Society on Nov. 10th, 1897.

[2] Public Health Reports, vol. ii., p. 459.

suggests subject matter for sewers and scavenging. Notwithstanding this arbitrary definition, however, it may be contended that, in spite of all reservations, phthisis comes rightly within the class of filth diseases and the eminent writer of the report would probably be one of the first to acknowledge this. What, in fact, can be conceived as more fitted to come within the designation of filth than the loathsome excretions from the lungs of phthisical patients? And what can better illustrate "utter bestiality of neglect" than the habit of voiding these excretions on the floors or on the ground of any place in which these patients may find themselves? The material of this expectoration contains, as is well known, myriads of the "seeds of infection." If this falls upon congenial soil it retains its vitality for long periods of time, even increasing in virulence if it is allowed to remain in this environment long enough for fresh colonies of the microbe to form. It may also dry up, may become powdered into tuberculous dust, and may then be wafted into the air to be breathed into the lungs of susceptible persons or to be deposited in milk or in other foods and may thus pass into the bodies of children or delicate persons predisposed to the reception of the disease. In one or another of these ways it comes strictly within the description given of a filth disease and in its effects it is infinitely more deadly than enteric fever, the "type and quintessence" of these disorders.

There are, in fact, many points of resemblance between tuberculous disease and enteric fever. The specific organism in each is a bacillus, remarkably long-lived in suitable surroundings, but easily deprived of its virulence by the action of sunlight. They are both "facultative saprophytes"—that is, though they are ordinarily parasites they can exist and even grow outside the body in the presence sometimes of very small portions of organic matter. Neither disease is directly infectious. They both spread by means of the excretions from the body: phthisis chiefly by the intervention of "tuberculous dust" conveyed into the lungs by the medium of the air, enteric fever chiefly in drinking-water, by which means it passes into the intestines. Both diseases may, however, be conveyed either by air or by articles of food or drink.

It is not necessary to lay stress upon the similarity between the lesions produced by these diseases, but it may be incidentally pointed out that Villemin showed that tuberculosis shares with syphilis, glanders, and enteric fever the character of forming "caseous" material. In his Gulstonian Lectures on Tubercle also Dr. Southey showed that typhoid lymphomata are very like tubercle both in their composition and their course affecting similar parts and leading to like lesions. He places tubercle between cancer and these other lymphomata. It is significant of the likeness between phthisis and enteric fever in respect of their derivation from filth that in this country both complaints have greatly declined in frequency since the general improvement of drainage and water-supply. In the last sixty years phthisis has been reduced to one-third of its former prevalence and enteric fever to one-fourth or less.

It is of so much importance that the connexion between phthisis and filth should be clearly recognised that it will be well to advert briefly to the other evidence which is forthcoming to prove the fact. This evidence is of two kinds—(*A*) statistical and (*B*) experimental.

(*A*) *The statistical evidence.*—1. The returns of the Registrar-General prove that phthisis has declined from over 3800 per 1,000,000 in 1838 to 1380 in 1894. This is a reduction of about 2500 per 1,000 000 annually or a saving of an army of 75,000 lives in a year, or nearly three-quarters of a million in a decade. This great improvement has probably been brought about mainly by the better hygienic conditions of the people, especially as regards subsoil drainage, better dwellings, cleanliness, food and clothing, &c.—in other words, by a diminution in the amount of filth of various kinds. 2. This view is supported by an analysis of these returns showing the distribution of the disease in overcrowded, unsanitary areas and its incidence upon certain portions of our large towns, its chosen sites being the crowded, shut-in courts and alleys, the back-to-back houses, and the one- or two-roomed tenements where all kinds of filth, but especially air-sewage, abound. 3. That this incidence of the disease is not due simply to poverty or to the poor constitutions of the inhabitants or to bad food or exposure to the elements or to climate is amply proved by the army and navy returns from all parts of the world. These returns refer exclusively to men who have been chosen from amongst the general population expressly for their health and strength; and it has been proved by Dr. Welch and others that they are less hereditarily predisposed to the disease than the rest of the community. The report of the Army Sanitary Commission shows that in soldiers the excessive mortality from phthisis was mainly due to the "bad ventilation and the imperfect drainage of the barracks" in which they were compelled to live at all the stations to which these British troops were sent. Similar conclusions are also to be drawn from the Navy Medical Returns. 4. That the disease is not due, however, to ordinary filth is sufficiently proved by the immunity of the fishermen of St. Kilda or of the St. Lawrence River, who live in vile surroundings, their huts being more like pig-sties than human habitations; and the same fact comes out in the history of many a savage tribe. 5. A specific form of impurity is needed; and that this impurity is the peculiarly nasty product of phthisical expectoration is clearly shown by the statistics relating to the German nursing orders collected and published by Dr. Cornet. No one studying these statistics can fail to come to the conclusion that infection from the sick to the healthy had taken place through the medium of tuberculous dust produced by the drying up and grinding into powder of the excretions of tuberculous people. The special incidence of the disease upon the novices employed to sweep the floors would almost suffice by itself to point to its source of origin. 6. But there are indications in these and other statistics that the specific germ needs a special food and environment either to preserve its existence or to enhance its virulence. The dirty, ill-lighted, ill-ventilated convent cells were evidently peculiarly favourable to the tubercle bacillus, and a similar conclusion must be formed from the report of the Army Sanitary Commission and from the many other returns from public institutions, prisons, reformatories, &c., which are given by Parkes in his work on Hygiene, by Hirsch in his "Medical Geography," and by others. 7. Lastly, statistics compiled by Bowditch and Buchanan, by the Registrar-General for Scotland, by Haviland and others show the influence upon the virulence of the disease germ of emanations from a badly drained, impervious subsoil. These observations show at least the probability that certain special forms of impurity have an influence in promoting the infectiveness of the specific germ.

(*B*) *The experimental evidence.*—Experimental researches have added weight to the conclusions to be drawn from statistics. (*a*) We have the observations of Villemin, Schottelius, and others to show that tuberculous material inhaled with the breath or ingested in food or in milk will convey the disease to animals and that it can also be inoculated under the skin. These researches show at any rate that this form of filth can produce the disease. (*b*) Professor Koch also, as the result of his exhaustive inquiries, came to the conclusion that tuberculous sputum dried up and ground into dust is the most common and most potent of all forms of infective material, and on a review of all the facts it is difficult to frame any other opinion. Cornet, indeed, by researches subsequent to those already mentioned may be said to have proved this point by inoculating guinea-pigs with the dust from rooms, &c., and thus producing tuberculosis. (*c*) Experimental evidence is likewise forthcoming to indicate the nature of the special organic impurity which keeps alive the bacillus of tubercle. By means of some researches carried out in the years 1889 and 1890 with the assistance of Professor Dreschfeld, of Owens College, Manchester, I was able to show that the air of a poor cottage in Ancoats, with poor ventilation and undrained basement, in which several cases of phthisis had occurred, was able to preserve unchanged the virulence of tuberculous sputum for two or three months at least, but that the same sputum exposed freely to air and light in a hospital for phthisical patients and also in a well-lighted, well-drained, and well-ventilated house entirely lost the power of communicating the disease to guinea-pigs by inoculation. A further research carried on in 1894 in conjunction with Professor Delépine proved that less than two days' exposure to air and light with only one hour of sunshine was sufficient to destroy the virulent power of tuberculous sputum when it was exposed in a clean, well-drained, well-lighted house. Evidently in the air of the Ancoats cottage there must have been some form of organic impurity favourable to the life of the bacillus.

(*d*) During the present year (1897) I have been able to demonstrate the character of some of the substances thus capable of promoting the vitality of these "seeds of infection." A vast number of substances have been tried as cultivation media of the bacillus and Beck and Proskauer have shown that in the presence of glycerine most nitrogenous bodies are capable of sustaining its growth at the body temperature. No attempt, however, seems to have been made to test in this respect the influence of the substances most likely to be met with by the organism in its usual habitats and at ordinary temperatures. From a review of the statistical evidence it seemed most probable that some form of impurity commonly present in the air of unsanitary dwellings would be likely to prove a favourable medium of cultivation. A series of experiments was therefore undertaken with the object of testing this point.[3] The materials chosen for trial were: The condensed vapour from (1) healthy breath; (2) phthisical breath; (3) cellar air (Southampton); (4) cellar air (Bournemouth); (5) a weaver's shed (Blackburn); and (6) pure ground air. These fluids were all carefully sterilised and various substances were used as the supporting medium upon which to sow the seed, such as simple glycerine agar, potato, pure filter-paper, lining wall-paper. All these substances were also sterilised and kept soaked in the fluids mentioned. All the fluids proved to be excellent cultivating media with or without the addition of a small percentage of glycerine. (*e*) These experiments were carried on at temperatures of from 35° to 37° C., but they were all repeated at a temperature of about 20° C. in order to learn whether the usual conditions of many cottage homes would suffice to keep the bacillus alive in these media. In a large proportion of instances these latter experiments were also fairly successful and it was thus proved that the virus of tubercle could be kept alive and could even grow under these conditions. There is now certainly nothing extraordinary in these results. Professor Koch indeed asserted, on the basis of his own experiments, that the bacillus of tubercle is a true parasite and that it could only be cultivated at, or near, the temperature of the human body; that it could not therefore have a saprophytic existence or live and grow at the ordinary temperatures of cottage dwellings. Other observers, however, notably Sir Hugh Beevor, Dr. Kanthack, and Professor Delépine, have succeeded in cultivating the microbe on potato at comparatively low temperatures, and, as mentioned above, I have myself been successful with the media which I have employed. It may then be now regarded as certain that the bacillus can grow outside the body whenever it can get hold of a sufficiently impure soil and whenever its activity is not interfered with by the adverse conditions of abundant air and daylight. The filth-origin of the germ of phthisis and the sustaining influence of external filth upon its further growth may therefore be taken as proved.

The conclusion that phthisis is a filth disease is not likely to pass without protest from those cleanly people whose families have suffered from the complaint. They will feel it to be a slur upon their reputation and will ask wherefore it should come nigh their wholesome dwellings? The truth is that both enteric fever and phthisis have the power of operating at a distance. Sir John Simon says with reference to the former: "Filth does not only infect where it stands, but can transmit its infective power afar by certain appropriate channels of conveyance. ..... Thus it has again and again happened that an individual house, with every apparent cleanliness and luxury, has received the contagium of enteric fever through some unguarded drain inlet, or that numbers of such houses have simultaneously received the infection as an epidemic in places where the drain inlets in general have been subject to undue air-pressure from within the sewer. It has again and again happened that households while themselves without sanitary reproach have received the contagium of enteric fever through some nastiness affecting (perhaps at a considerable distance) the common water-supply of the district in which they are" (p. 465). He instances the case of Windsor when the highest persons in the land were affected and the cases of Croydon and Worthing. Much the same may be said of phthisis, from which complaint many have suffered whose houses are above reproach, though it may be doubted whether there are not many even of the luxurious homes of the rich where air sewage is not merely allowed to remain, but where it is even closely stored up by the precautions taken against cold and draught. Even where there is an abundance of fresh air and sunlight is it certain that the inmates of these perfectly hygienic houses never visit places where the specific forms of filth are to be found in abundance and in full possession of all their virulence? What are we to say of many of the places frequented by these otherwise happily situated individuals? What of the constantly attended places of public resort? What of the theatres, concert-halls, assembly rooms, churches, chapels, &c.?

Theatres as at present constructed are often mere death-traps to delicate, susceptible people. These so-called temples of the Thespian art are often charged with many different forms of pathogenic microbes ready to flourish into disease when they meet with congenial soil. They are nightly filled with people some of whom at least are in one or another of the stages of phthisis, and though perhaps many of them are too well bred to expectorate upon the floors others are not so particular and nearly all carry about with them handkerchiefs laden with tuberculous material. The halls and passages and galleries of these places and even their auditoria are seldom if ever visited by the rays of sunlight and their atmospheres are overcharged with carbonic acid and ammoniacal or sulphurous vapours. They are imperfectly ventilated, chiefly in many cases by the spent and disease-laden air from the stage and wings where the employés are still more liable to be in advanced stages of phthisis and where they are still less likely to abstain from spitting upon the floors, scenery, &c. They are true hotbeds and forcing grounds in which may be kept alive and even cultivated the germs of tuberculous and other diseases.

Concert halls and assembly rooms are in little better case than theatres in respect of their appliances for ventilation, for cleanliness, and for the admission of sunlight.

What again shall we say of churches and chapels and other places of public worship? Is it not notorious how badly they are ventilated and how little their "dim religious light" can do to disinfect the germs of disease? Let anyone gifted with an ordinary sense of smell or who knows what fresh air means enter almost any of these assemblies for public worship, even after only a short service, and let him describe the atmosphere he will meet with on entering. It is charged with "air sewage" of the vilest quality, the imperfectly removed emanations from hundreds or thousands of human bodies. There is probably less visible filth than in places of amusement; but even here there can be no doubt that there is plenty of tuberculous dust floating about in the air and the conditions it finds there are well calculated to keep it alive and to preserve its virulence. Here again therefore we have an important source of danger to the individuals whose case we are now considering. There is also danger in closely shut up and badly ventilated vehicles such as omnibuses and railway carriages; and, in fine, we have not far to look for sources of phthisis in most of the haunts of ordinary so-called civilised life. It cannot be said, therefore, that any direct blame attaches to the families of those who have fallen victims to phthisis. The opprobrium rests rather with the supreme health authorities and with the general public for allowing places of public resort to remain in such a condition as to be a serious source of danger to their frequenters. It is a public scandal that places of amusement and our temples of worship should be allowed to remain without adequate ventilation and without frequent and periodical purification.

It is possible that, owing to the terms in which I have described the dangers arising from places of public assembly, I may be accused of attempting to increase the "scare" of infection which at present undoubtedly possesses the public mind, but this is very far from my intention. I believe that in temperate climates direct infection from patients is one of the rarest events. It is only when tuberculous filth is scattered about in places fitted to keep alive the bacillus that infection becomes probable and it is therefore against the retention of gross impurities in the air that the above remarks have been written. I have elsewhere given my reasons for concluding that in well-kept, cleanly, well-aerated, and well-lighted dwellings[4] there is little, if any, danger of infection from phthisical persons. On the other hand, I believe strongly in the danger of infected, insanitary houses and even infected areas, and it has been owing to that conviction that I have ventured to raise a protest against the

[3] This research was communicated to the Royal Society on Nov. 25th, 1897 (see Proceedings of the Royal Society).

[4] On the Limits of Infection by Tubercle. (Cornish, Manchester.)

filthy habits of communities and against the vile condition of our public assembly rooms under which infection from phthisis is only too likely to take place.

It will be gathered from what has been said that in my opinion it is not the person of the phthisical subject that is to be dreaded but the conditions under which he lives. It is true that, like the typhoid fever patient, he is the source and origin of the infective material, but he is not himself directly infectious. In the case of enteric fever it is well known that if proper care is taken to disinfect and to dispose of the excreta there is no risk of infection to the attendants, and the same immunity can be claimed under this condition for the nurses of phthisical persons.

The measures to be adopted in order to prevent the spread of phthisis are indeed very similar to those required for staving off an epidemic of enteric fever with this difference, that instead of paying especial attention to drains and sewers and to the condition of the drinking-water it is the purification of the air, the admission of sunlight, the drainage of the subsoil, the provision of damp-proof courses and concrete basements that must be chiefly attended to for the prevention of phthisis. The means which are used and which have been to a great extent successful for the suppression of enteric fever are—(*a*) notification of disease, (*b*) disinfection of excreta, (*c*) hospital treatment, and (*d*) general sanitary measures. Similar methods, with certain modifications to suit the differences between the conditions of the disorders, must be adopted for the suppression of phthisis. Thus (*a*) the notification of phthisis can hardly be made compulsory as in the case of enteric fever. Phthisis usually runs a much more chronic course than typhoid fever; it is not unfrequently difficult to make an accurate diagnosis; and the announcement of its presence would be regarded by many as a blot upon the family escutcheon, especially among the upper classes of society. Notification amongst these classes would indeed be almost useless since no medical officer would interfere with the private medical practitioner, and we may be sure that for their own sakes these families would take every care to prevent the spread of infection. In Manchester a plan of procedure was formulated a few years ago at a meeting, called together at my suggestion, of the medical officers of the Hospital for Consumption, some of the physicians of the Royal Infirmary, and Dr. Tatham, then the medical officer of health of Manchester. It was proposed that the medical officer of health should send to the medical men then present, and to any others willing to carry out the modified notification, post-cards addressed to himself, which should be filled up with the names and addresses of phthisical patients in whom the disease had advanced as far as excavation or in whose sputum bacilli had been detected. Only those cases were to be reported which were likely to spread infection owing to the state of their dwellings or to want of means or of will, to disinfect. These cards were to be countersigned by the patients themselves. On his part the medical officer of health promised to send to these people carefully drawn up papers of instructions stating the precautions to be taken with the sputum or other excreta and directions as to ventilation and admission of sunlight. He also offered to disinfect free of charge any dwelling likely to be a source of danger. This plan of campaign was adopted both in Manchester and in Salford and was to some extent carried out not only in these towns but in the surrounding district. It was also unanimously approved of by the north-western branch of the Association of Medical Officers of Health.[5] (*b*) Destruction of the bacillus in the excreta must be carried out by 1 per 500 solutions of corrosive sublimate, by fire, or by sluicing away the already disinfected excreta into the sewers. Infected houses must be treated by brushing over all surfaces with 1 per cent. solutions of chloride of lime according to Professor Delépine's directions. (*c*) Although in so chronic an ailment hospital accommodation cannot be provided for all the cases likely to require isolation yet it would undoubtedly be a great benefit both to the sufferers themselves and to the general community if all who were without proper lodging and accommodation or who were unable themselves to take proper precautions could be received for treatment into fitting homes. May we not hope that in the near future local authorities will see the importance of establishing in connexion with fever hospitals wards for the reception of all such cases? It is much to be regretted that the funds formerly so lavishly provided for the segregation of lepers are not now available for the treatment of the strictly analogous disease, tuberculosis. (*d*) The last of the measures to be directed against the spread of these "filth diseases"—namely, sanitary reform—is also probably the most important. We know how efficient it has been against enteric fever, and it is probable that when it is once fairly directed against tuberculosis it will be equally successful. Already the simple measures of improved drainage, better house accommodation, better food, &c., which have diminished the death-rate from enteric fever, have had some effect upon the mortality from phthisis, reducing it by nearly two-thirds, as I have already pointed out. Some more special means will, however, have to be adopted if the remaining third of this mortality is to be abolished. Particular attention will have to be paid, as we have seen, to the condition of the air in all places of public assembly and a much higher standard of ventilation will have to be ensured in all workshops, weaving sheds, and in all rooms occupied by working people. It is much to be desired that the standard recently proposed by the Home Office Committee on Cotton Cloth Factories, of which I was a member, could be applied to all places where manual labour is carried on. Again, "air-sewage" must be promptly carried away or destroyed in all the densely populated recesses of our towns and in order that the natural enemies of the tubercle-bacillus—fresh air and sunlight—may have free scope to act local authorities will everywhere be obliged to carry out extensive works of re-construction and will have to put in force the strongest powers they now possess for preventing the pollution of the atmosphere by smoke or noxious vapours; they must open out all confined areas, must destroy all insanitary house property, and must provide ample lung space in the shape of public parks and playgrounds. It would be well also if all towns would follow the enlightened policy of Liverpool and London and obtain powers for securing that an adequate space shall be left around all houses or buildings in the future and that ground air shall be excluded from buildings by efficient concrete basements, damp-proof courses, &c. Owing to the recognition of the fact that enteric fever can be stamped out by attention to the water-supply and by the proper disposal of abdominal excreta this disease has now come to be regarded as entirely preventable and its presence is felt to be an opprobrium upon the sanitary management of the community. If it could be made plain to men's minds that phthisis is likewise essentially a "filth disease," and if the means of disposing of the "air sewage" from which it springs could be clearly shown to the people, its presence as an endemic in any community would quickly come to be equally regarded as an opprobrium and the disease would soon be as great a rarity as leprosy.

Bournemouth.

[5] A somewhat similar scheme has also for the last year or two been carried out in New York. (See report of the medical officer of health.)

CASES OF URETERECTOMY AND NEPHRO-URETERECTOMY—PARTIAL AND COMPLETE.

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WHEN performing nephrectomy if the ureter is found to be dilated and suppurating, as it often is in calculous and some other affections, or is in a condition of tuberculous ureteritis it ought to be removed in part or to the whole of its extent. Ureterectomy partial and complete is, in fact, an important adjunct to nephrectomy and may be performed either at the same time or subsequently according to circumstances. If done as a primary operation it prevents the formation of a fistula which otherwise would follow nephrectomy for some forms of pyo-nephrosis or tuberculous disorganisation of the kidney. As a secondary operation it is required when a discharging fistula persists due to ureteral disease and not to a suppurating "foyer" in the retro-peritoneal cellular tissue. By ureterectomy is thus meant not the

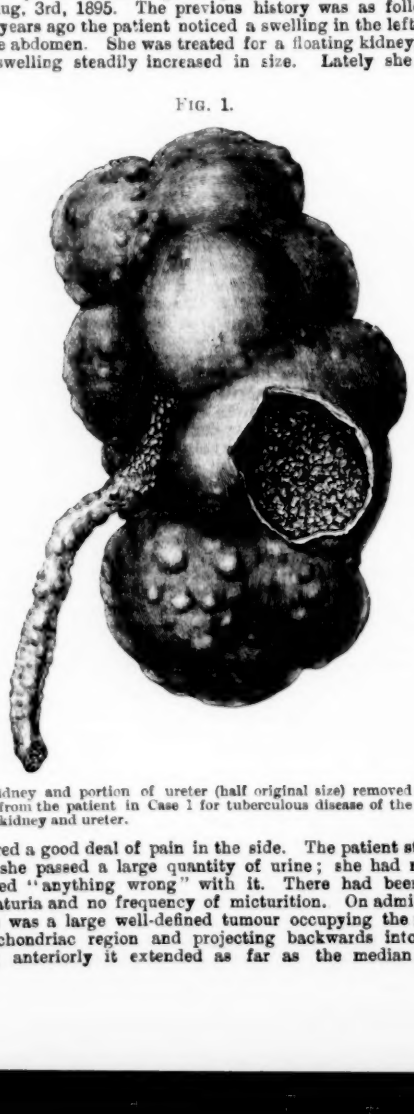
excision of an inch or so of the tube in the course of a plastic operation on the renal pelvis or ureter, but the removal of a great part or the whole of it for conditions which nephrectomy alone cannot cure and sometimes is not able even to alleviate. Other circumstances being the same the operation is distinctly easier in the male than in the female; in the latter the ovarian and uterine vessels and the broad ligament complicate the process of exposing and removing the pelvic portion of the ureter. In the male there is nothing in the way and the pelvic part may be as easily removed as the abdominal. The operation is entirely retro-peritoneal.

Future experience will show whether tuberculous ureteritis may be brought to a check by removing several inches of the tube together with the kidney when the latter is the primary seat of the disease. Opinions differ as to the effect of thus putting an end to the physiological function of the ureter. My experience up to the present seems to point to the probability of this being in some cases the result of nephrectomy combined with the removal of so much of the ureter as is contained within the abdomen proper and the first part of the pelvis. The abdominal is of course the portion of the ureter first and most extensively affected in descending tuberculous ureteritis and if it be found that partial ureterectomy—as low down, for instance, as the posterior fold of the broad ligament—suffices to stay the progress of the disease in the lower part of the ureter there will but rarely be occasion to perform the more difficult part of complete ureterectomy in the female—namely, the removal of that portion which is within the layers of the broad ligament. In the male when the disease extends low down along the tube it will always be as well to remove the ureter as near the bladder as possible. The additional amount of time required for, or of shock following, ureterectomy when done at the same time as nephrectomy is but slight if the ureter can be tracked down from the kidney; but if this is not possible, as the search for the ureter on the detached peritoneum or in the cellular tissue on the psoas is often difficult, ureterectomy will sometimes best be postponed for a subsequent operation.

In the first of the three cases here recorded—one of tuberculous disease of the left kidney and ureter—nephrectomy with primary partial ureterectomy was performed. In Case 2 secondary partial ureterectomy was done: and in Case 3 complete ureterectomy was effected together with the removal of the remnant of the kidney, the upper third of the organ having been previously removed for tuberculous disease. In other cases, before and since the date of the operation on Case 1, I have performed primary partial ureterectomy chiefly for tuberculous disease and in one case for traumatic rupture, removing the ureter as low down as the brim of the true pelvis. I have selected for publication the notes of the first case because it is the only fatal one amongst them and also because there is a woodcut (Fig. 1) of the specimen which shows (1) the extremely lobulated outline of the organ which was converted into a conglomerate mass of distinct sacs, each of which was filled with a peculiar pale greenish coloured and very soft putty like material, and (2) the marked calcareous change which the ureter had undergone. The cause of death was acute bronchitis and heart failure and might have happened just the same if no operation had been performed. In other cases the ureter had suffered in a similar but less extreme way; in other cases again the ureter dilated and tortuous was filled with semi-fluid tuberculous material and urine, but with walls otherwise unaltered. In one case since dead of tuberculous lungs the diseased ureter was surrounded by a tuberculous abscess in the iliac fossa. In a specimen of kidney and abdominal portion of ureter removed quite recently the kidney was in a state of very advanced tuberculous pyonephrosis of about six years progress, but the ureter itself had not become invaded by the disease. The history of patients together with microscopical examination of the ureters after removal prove how slowly in some cases tuberculous disease when primarily attacking the kidney extends to the ureter. Case 2 is a very remarkable instance of what may happen when the whole of the renal capsule is left behind after intracapsular nephrectomy, more especially, perhaps, if the ureter connected with it is the seat of disease. It is, however, the only case in which I have known the same thing to occur. I have many times in the course of nephrectomy left large portions of the renal capsule behind when toughly adherent to the surrounding structures, but in these cases I have made it a rule after shelling out the kidney to trim off as much of the capsule as I safely could without wounding the colon, peritoneum, diaphragm or neighbouring solid organ. Sometimes nearly the whole of the capsule can thus be removed after the kidney has been taken away. In Case 2, however, the adhesions were so firm and so universal that I would not attempt its removal at the first operation, and when excising it at the second operation it was necessary to take extreme care of the colon, whilst the peritoneum actually suffered in several places. Case 3 raises the interesting and important question of resection of a portion of a kidney when the seat of limited tuberculous disease. The opinion has been expressed that in this form of renal affection if the opposite kidney is known to be healthy it is best to perform complete nephrectomy even though the tuberculosis of the affected kidney is very limited in extent. I do not myself share this opinion for the results in cases in which I have scraped out tuberculous abscesses or removed multiple wedges of kidney tissue when the seat of tubercle encourage me to view with favour the conservative practice adopted by Mr. Swain in this case. It is probable from the variations of the urine that the condition necessitating the nephro-ureterectomy was the result of an independent outbreak of the disease and not of the extension of some undetected focus overlooked by the operator.

CASE 1. *Renal tuberculosis; nephrectomy and partial ureterectomy.*—A woman, aged forty-four years, was placed under my care at the hospital by Dr. Lewis, of Chelmsford, on Aug. 3rd, 1895. The previous history was as follows: Five years ago the patient noticed a swelling in the left side of the abdomen. She was treated for a floating kidney, but the swelling steadily increased in size. Lately she had suffered a good deal of pain in the side. The patient stated that she passed a large quantity of urine; she had never noticed "anything wrong" with it. There had been no hæmaturia and no frequency of micturition. On admission there was a large well-defined tumour occupying the right hypochondriac region and projecting backwards into the loin; anteriorly it extended as far as the median line

FIG. 1.



Kidney and portion of ureter (half original size) removed from the patient in Case 1 for tuberculous disease of the kidney and ureter.

of the abdomen; its lower border was on a level with the anterior superior iliac spine, while its upper limit could not be felt, as it extended under the costal arch. There was dulness in the left loin and over the tumour laterally, but resonance in front. It was rounded in outline, smooth on the surface, and fluctuating. The descending colon lay in front of the tumour. The average quantity of urine passed in twenty-four hours was 60 ounces. It was clear, acid in reaction and contained no albumin. On Aug. 6th an incision was made in the left loin and the tumour exposed. It was cystic, and on opening the capsule a large quantity of pale green caseous material escaped. Several other cavities in connexion with the main cyst were then emptied. The kidney substance was entirely destroyed. The cyst wall was separated from the surrounding tissues and the pedicle exposed. The renal vessels were first ligatured and divided. The ureter, filled with cheesy tuberculous matter, was traced downwards into the upper part of the true pelvis and ligatured four inches below the enlarged kidney. Its walls were in a state of advanced calcareous degeneration. The wound was closed, a drainage-tube was inserted and dry dressings were applied. The patient was very sick after the operation. Acute bronchitis set in on the day following the operation—i.e., Aug. 7th. She became extremely collapsed on Aug. 8th. Brandy (2 drachms) was given every hour, and a hypodermic injection of strychnia was administered, but she rapidly sank and died at 8 P.M.

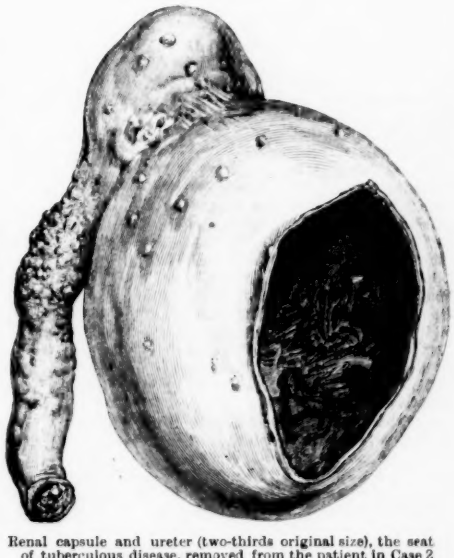
The following is the pathologist's report of the post-mortem examination. "The left kidney has been removed through a recent lumbar incision. There is no injury to the peritoneum and no peritonitis. The right kidney is pale but not enlarged. The lower end of the left ureter shows extensive calcification. The bladder is natural. There are numerous cretaceous mesenteric glands. The liver, spleen, and the right kidney are anæmic. There is no hypertrophy of the left ventricle of the heart. There are emphysema, bronchitis, œdema, and hypostatic congestion of both lungs."

CASE 2. *Tuberculous kidney and tuberculous ureteritis; intra-capsular nephrectomy; subsequent removal of the renal capsule with the ureter as far as its entrance into the broad ligament.*—In February, 1896, Mr. Balding, of Royston, sent a single woman, aged thirty-three years, to be under my care at the Middlesex Hospital on account of tuberculous disease. She was sallow, thin, and weakly looking, and she stated that her mother had died from "consumption" and her father from "consumption of the throat." Her own general health had been good up to her twenty-second year when she "strained her left side" in lifting a heavy weight. She afterwards experienced great pain in the left side with inability to hold her urine for any length of time and had passed a little blood in her urine. She soon recovered from these symptoms and remained well for three or four months; then the pain returned and was more severe than at first, and slight hæmaturia reappeared. After two months of rest and treatment in St. Thomas's Hospital her health again improved and she remained pretty well for several months. Subsequent relapses occurred through the succeeding years up to the beginning of 1895 when she noticed a "lump" deep in her left side which caused her much pain and gradually increased in size. Micturition became now more and more frequent, till at length it was requisite every hour. There was no return of the hæmaturia. On admission on Feb. 28th, 1896, the left kidney was enlarged into an elastic tumour which bulged the ilio-costal space as well as the antero-lateral wall of the abdomen, and reached inwards nearly to the median line; it also extended upwards under the costal margin and downwards to the anterior iliac spine. It was moveable both in the antero-posterior and lateral directions, and could be made to descend nearly to the middle of Poupart's ligament when the patient held her breath after taking a full inspiration. There was resonance in front of the tumour. She complained of considerable pain on the left side of the abdomen and in the left loin. The right kidney was freely moveable, but not enlarged; she had felt a little pain in this side also of late. Micturition was very frequent; the urine had a specific gravity of 1016, was alkaline and contained albumin, pus, and numerous crystals of triple phosphates. The average quantity of urine passed in twenty-four hours was between 26 and 30 ounces.

On March 11th the patient was anæsthetised and through an oblique incision in the left ilio-costal space the kidney was exposed. It was seen to be lobulated, tuberculous, and pyonephrotic, and on being punctured some thick fluid resembling boiled starch was withdrawn. Through two incisions into different parts of the organ all the fluid contents were evacuated. The kidney was composed of two quite distinct sacs or spaces divided off from one another by tough fibrous partitions. It was very adherent to the surrounding tissues and on this account nephrectomy was performed without removing the renal capsule which was left almost entirely undisturbed in its relations to parts around. The kidney after removal was found to be studded with caseous tuberculous masses and riddled by caseous lined spaces, and on section it was seen that the renal cavity was divided into two large compartments each entirely shut off from the other.

A good recovery at first seemed probable but the subsequent course was unsatisfactory and exceptional. On and after March 17th (the sixth day from the operation) a little pain was complained of in the left side and the left iliac fossa, and the temperature ranged between 100° and 101·8° F. The urine still contained albumin, pus, and excess of phosphates but it was increased in quantity and averaged from forty to fifty ounces daily. On April 4th (twenty-four days after the operation) a slight swelling was detected in the left renal region and a little discharge escaped through the centre of the scar. Gradually

FIG. 2.



Renal capsule and ureter (two-thirds original size), the seat of tuberculous disease, removed from the patient in Case 2 thirty-one days after nephrectomy.

the swelling increased in size and in painfulness, so that on April 11th—i.e., thirty-one days after the nephrectomy—an incision was made through the old scar and was carried forwards upon the front of the abdomen along a curved line passing an inch to the median side of the anterior superior spine of the ilium towards the middle of Poupart's ligament. Through this the tumour was exposed and was found to be the renal capsule which had healed where it had been split for the enucleation of the kidney and had become distended with dark blood-coloured serum. The ureter was exposed below the cyst and was found to be tortuous and greatly thickened as low down as it was examined. An endeavour was now made to dissect out the renal capsule with its contents entire but this did not succeed; the capsule was pricked and the fluid contents escaped. In the process of detaching the capsule from its connexions the peritoneum was wounded in several places so adherent were they to one another, and it was with difficulty that the colon was detached without damaging it. The peritoneal wounds were closed by fine silk sutures. The ureter was then separated from its connexions as far down as its entrance between the folds of the broad ligaments and was there ligatured and divided above the ligature. It was removed together with

the renal capsule and after removal presented the appearance shown in Fig. 2; both ureter and capsule were affected by tubercle. The stump of the ureter above the ligature which was left in the pelvis was scraped and rubbed with iodoform. Iodoform gauze was packed into the retro-peritoneal space and the edges of the fascia, muscles, and integuments were brought together by sutures passed through all of them.

For five days after this second operation the evening temperature was nearly 101°, and the morning 99°; afterwards, till the conclusion of the case, the evening temperature did not exceed 99°. The daily quantity of urine maintained an average of from forty to fifty ounces; it was of specific gravity 1015, slightly acid when passed, contained a little albumin, sometimes also a trace of pus, but no blood. Three days after the operation the gauze packing was removed. The pain had all gone by April 15th; the sutures were all removed by April 21st; the patient was allowed to go into the garden on May 12th, and she was discharged from the hospital with the wound all but healed on July 9th. On Oct. 10th, 1897, Mr. Balding wrote: "She is still in fair health and does not require any medical attendance, though she is unequal to any very active employment."

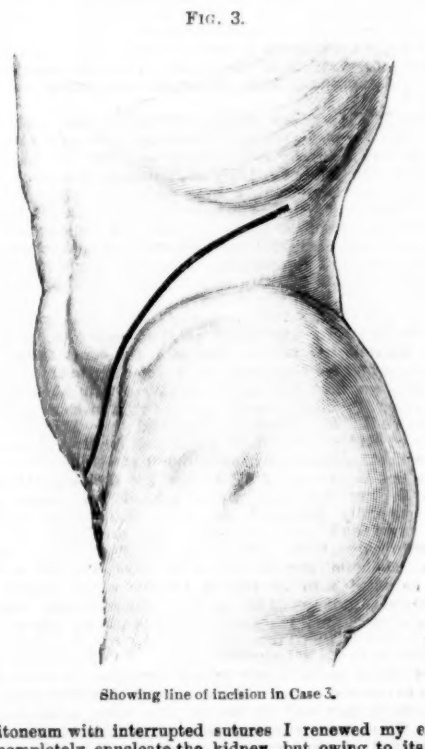
CASE 3. *Tuberculous disease of the left kidney; ablation of the upper third of the kidney, followed after eight months by complete nephro-ureterectomy.*—A young man, aged twenty-four years, had had the upper third of his left kidney removed for suppurating tuberculous disease in January, 1897, by Mr. Paul Swain, of Plymouth. A urinous and purulent fistula followed the operation. In the first week of June Mr. Swain had the intention to cure the fistula by completing the nephrectomy but for certain good reasons he abandoned the attempt, as he states in the following note.

"The first operation was performed on Jan. 19th. Great difficulty was experienced in getting the kidney out as it was situated so high up under the ribs. The upper segment was found on incision to be the only part of the kidney affected. This was removed and the kidney wound closed with chromic gut. The patient made a good recovery, but unfortunately a sinus remained leading down into the kidney. In the following June the wound was reopened with the intention to remove the kidney. All the parts, however, were so matted together that it was thought better only to scrape out the sinus. This plan was followed as at that time the urine was quite healthy and there was no symptom of return of tuberculous disease. The sinus did not heal and subsequently tuberculous matter was found in the urine so that removal of the kidney became imperative."

I saw this patient for the first time on Sept. 20th. There were then two fistulous openings about one and a half inches apart in the middle of an oblique scar in the left ilio-costal space. Each sinus easily admitted a grooved director and about two inches from the surface they both ran into the same deep track which passed upwards under the lower ribs and inwards towards the spinal column. From these sinuses urine trickled. On bimanual palpation of the loins no enlargement or undue fulness could be made out on either side, but pressure, even slight, over the course of the left ureter—more especially at the point where the brim of the true pelvis gave counter-resistance—made him complain of sharp pain. Micturition was frequent and painful and occurred every hour or oftener. The urine was turbid and alkaline, contained pus and a slight excess of phosphates, and had on quite recent examinations been found to contain tubercle bacilli. The patient was of a strongly-built frame and well nourished, but his face was pasty and pale. His father was a robust and healthy-looking man but the patient's mother had died a few years previously from tuberculous meningitis. Neither in his lungs, testes, nor other organs were there signs of tubercle and proof had been formerly forthcoming of a healthy second kidney because after the partial nephrectomy in January he daily passed thirty ounces of normal urine, whilst the urine excreted by the remnant of the left kidney was escaping by the wound. With this history and these symptoms there was a clear diagnosis of tuberculous uretero-pyelonephritis and I had no hesitation in recommending the removal of the remainder of the left kidney and the whole of the left ureter. The proposal was at once accepted by the patient and his father and approved of by Mr. Swain, and I was asked to perform the operation on the following day—viz., Sept. 21st.

As soon as the patient was anæsthetised the bladder was emptied of urine and a few ounces of weakly carbolised warm water were injected into it. A careful examination per rectum was then made. I could not feel the ureter on either side and the vesiculæ seminales felt normal. There was one spot on the rectal surface of the prostate, the size of a pea, which was somewhat harder than the rest of the gland, but I did not think it sufficiently indicative of a tuberculous focus to alter my views as to the treatment to be adopted; and in this opinion Mr. Swain after making examination agreed with me. Long probes were passed into the sinuses as far as they would go. I then made an incision beginning a finger-tip's breadth below the last rib at the outer border of the erector spinæ, and carried it forwards and downwards into the old scar along which it passed until it had divided the tissues intervening between the two sinuses; it was then prolonged, leaving the line of the old scar, downwards and forwards an inch to the inner side of the anterior superior spinous process, and at a later stage in the operation was continued parallel to Poupart's ligament about as far as the internal abdominal ring (Fig. 3). I next deepened the lumbar part of the wound and reached the kidney by following the track of the probes. The lower end of the kidney was partly free in a small perinephric space which when subsequently laid open was seen to be lined by a tough, glistening, smooth membrane, and in it doubtless urine and pus had lodged. The colon was inseparably adherent to the tissues along the outer border of the kidney, and in trying to separate these from the kidney the peritoneum close to the colon was torn. Having temporarily closed the rent in the

FIG. 3.

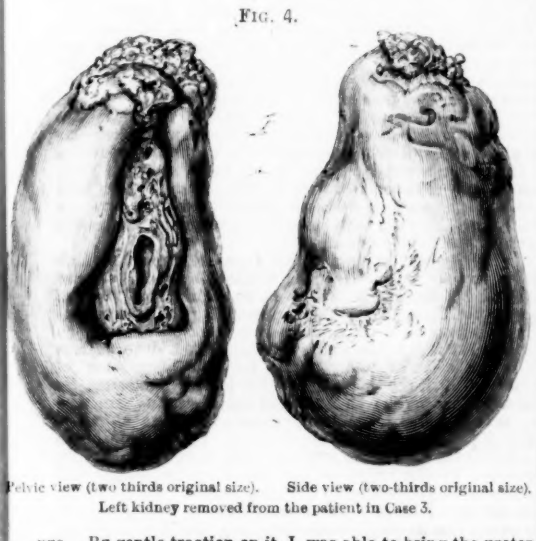


Showing line of incision in Case 3.

peritoneum with interrupted sutures I renewed my efforts to completely enucleate the kidney, but owing to its very high situation under the ribs I could not reach its upper end to loosen it. To give more room I first made a short vertical incision over the last rib upwards from the oblique incision but it was not until I had removed the greater part of the last rib that I was able to detach the kidney completely from its tough adhesions above. The kidney was then brought well into the wound, when an artery of some size behind the hilum spurted forcibly and had to be ligatured. This was probably a posterior branch of the renal artery. Owing to a quantity of indurated fibro-lipomatous tissue fixing the

hilum to the side of the spinal column I feared I might possibly damage the aorta if I attempted to clear this away so as to bring into view the renal pelvis and the upper end of the ureter. I therefore transfixed the pedicle of the kidney with a needle carrying a double silk thread and ligatured it—vessels, ureter, and fibro-lipomatous tissue—in two equal portions. As soon as the kidney was cut away the pedicle retracted upwards towards the inner border of the spleen the lower end of which was fully exposed in the depth of the upper part of the wound. The next step was to find the ureter. It was clearly useless and risky to seek for its upper end in the dense tissues which surrounded it, so I detached the peritoneum as low as the brim of the pelvis and felt for the iliac artery. The peritoneum and subjacent viscera were protected by a large flat sponge and drawn inwards by Mr. Burghard who with Mr. Swain gave me valuable assistance. The ureter was then sought for on the detached aspect of the peritoneum at the point where the serous membrane had been raised from off the iliac vessels at the brim of the pelvis. It was seen as an obscure bluish-yellow, tape-like band closely adherent to the peritoneum, against which it was firmly held in a sheath as distinct as the sheath of any artery. I scratched through this sheath with the end of a grooved director and then separated it laterally from the ureter. I introduced an aneurysm needle around the ureter and then replaced the needle by the end of my index finger and so secured a loop of the tube. The ureter as it bulged before the finger was seen to be considerably dilated and filled to distension with

FIG. 4.



Pelvic view (two thirds original size). Side view (two-thirds original size).

Left kidney removed from the patient in Case 3.

pus. By gentle traction on it I was able to bring the ureter into relief and with a few touches of the scalpel to clear it from below upwards as far as the dense fibro-lipomatous tissue near the renal pedicle. Here careful dissection was needed to detach the peritoneum and colon, and when this was done they were retracted inwards and forwards after tucking a flat sponge over them. The sponge was of good service in giving additional protection to the rent in the peritoneum as was proved a few seconds later when the renal end of the ureter in the course of being dissected from the structures which encased it was suddenly torn out of the loop of ligature which surrounded the renal pedicle, and the wound was flooded with the pus and urine it contained. After irrigating the wound and securing the renal end of the ureter by a ligature the wound in the peritoneum was permanently closed by a continuous suture without removing the interrupted sutures previously introduced. At this stage the incision through the abdominal parietes was carried forwards to a point close to the internal abdominal ring and until the deep epigastric vessels were exposed. The peritoneum was then detached from the wall of the pelvis and the ureter was followed and isolated as far as the base of the vesicula seminalis and the wall of the bladder. The contents of the vesical end were squeezed into the part of the ureter just above and two ligatures were here applied about three-quarters of an inch from one another and the tube was divided between the ligatures. The cut end of the piece of ureter still attached to the bladder was carefully cleaned and rubbed freely with iodoform gauze and then closed over with a Lembert's suture. Three long strips of iodoform gauze were packed into different parts of the wound and the edges of the wound were closed by interrupted sutures passing through all the divided structures. The ideally perfect thing to have done with the short remnant of the ureter left attached to the bladder was to have catheterised and irrigated it through into the bladder, but in the interest of the patient I thought it best not to do this. He had been nearly two hours under the operation and though the operation had been well borne throughout, thanks largely to the way in which the anæsthetic was administered by Mr. Carter Braine, I did not wish to run the risk of fouling the tissues in the deep recesses of the pelvis and of spending time in cleansing them afterwards.

FIG. 5.

Ureter (two-thirds original size) removed from the patient in Case 3.

The after course of the case was quite smooth and uninterrupted. The gauze packing was removed on the second and third days. The daily average of urine for some days after the operation was from 28 to 32 ounces; at first it was of a dirty brown colour from blood, and subsequently yellow flakes and a little pus, I believe from the lower end of the ureter, were passed with it. On Sept. 24th it was acid, of a yellowish straw colour, and contained a considerable amount of albumin. Subsequently it increased in quantity, contained no albumin, and could be retained for two and a half and three hours. The wound healed kindly and the patient, greatly improved in health, returned home on Oct. 26th. Some time after his return home the scar broke down in two or three spots and the frequency of micturition returned to an extent. Mr. Swain has been good enough to inform me, under date of Dec. 27th, that ligatures have been discharged through the sinuses, all of which are now closing, and that micturition is again less frequent.

The kidney was puckered on its surface; its upper end was narrow and scarred and coarsely granular in appearance at the site of the former excision. Here as elsewhere it was invaded with tuberculous material. The interior of the kidney was hollowed out into cavities communicating with the dilated and suppurating renal pelvis. The ureter was stuffed with caseous and purulent fluid, its walls were thickened and tortuous and its lumen was expanded. When first removed from the body it looked like a limp, white, asparagus stem, and could be held out nearly straight when seized by one extremity.

Cavendish-square, W.

MEDICAL MAGISTRATES.—Mr. Arthur Andrews, M.R.C.S., of Albury, New South Wales, and Mr. Murdoch Matheson, M.D., Queen's College, Kingston, Canada, of Waverley, Sydney, have been appointed magistrates for the colony of New South Wales.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The new laboratories for the London School of Medicine for Women now in process of erection will, it is hoped, be ready for use at the commencement of the Summer Session. The new buildings include laboratories, lecture rooms, &c., for anatomy, physiology, biology and physics, and chemistry, each department occupying an entire floor in the building. It is also hoped that the whole school will be rebuilt in the course of a few years at a cost of about £20,000.

FURTHER REMARKS ON "COLOUR HEARING."[1]

WITH COLOURED ILLUSTRATIONS.

BY W. S. COLMAN, M.D., F.R.C.P. LOND.,

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ATTENTION has been called by Mr. Francis Galton to the great variations in the exact manner in which mental processes are carried out in different individuals. In his fascinating book, "Enquiries into Human Faculty," he has given many illustrations of this individuality. One of the most remarkable of these is the faculty possessed by a considerable percentage of persons of experiencing a sensation of colour in association with certain sounds the colour seen being definite and invariable for the same sound. This faculty had been observed by many earlier writers and had been ascribed to morbid brain conditions. My attention was called independently to these curious conditions and I had the opportunity of investigating a number of cases the result of which appeared in the article already referred to in a footnote. It was found that the cases fall into two groups. In the first there is a crude colour sensation, often very beautiful, associated with certain sounds such as each of the vowel sounds, musical notes, or particular musical instruments. The appearance is usually that of a transparent coloured film similar to a rainbow in front of the observer but not obscuring objects. In the second group there are colour sensations whenever letters or written words (symbols of sound) were spoken or thought of, so that when a word is uttered the subject visualises the letters, each having a distinctive tint. I have since that time been able to investigate a number of additional cases. Most of them were of the same character as those previously described and need not therefore be again described. Others which illustrate fresh points will be described later.

A study of these additional cases entirely confirms the opinions previously expressed as to the nature of the phenomena—viz., that they are "associated sensations" analogous to the cutaneous sensation of shivering in certain parts of the body, varying in different individuals, which is experienced at the sight or thought of an accident or at the sound of the squeak of a slate-pencil. The subjects are more frequently males than females. I have met with about the same proportion among highly educated individuals and those who have had an ordinary board school education. It is difficult to obtain any light as to the origin of the phenomena. They nearly always date back to the subjects' early childhood. It has been suggested that they have been due to the child learning his letters from a coloured alphabet, but this is certainly not so in some cases. In one case the letters in the alphabet used for teaching were all pink, and none of the colours excited by the pronunciation of words were pink. In another all the members of one family (who possess this faculty) were taught from the same coloured alphabet, but their colour experiences had nothing in common. Even where the faculty is inherited mother and daughter associate totally different colours with the same sound.

The tints excited are very definite and characteristic, each for its own sound. They do not vary as time goes on. In one of my cases the tints were exactly the same when recorded after an interval of ten years. The colours are scarcely ever the same in two individuals. This is very clearly shown in the coloured diagrams which accompany this paper. The tints given are only approximate. If it were possible to reproduce the exact shade still greater variety would be evident. The first diagram shows the tint excited by the spoken vowel sounds in twenty-one individuals, while the second shows the coloured letters which are visualised by five subjects respectively when they think of a word. It will be seen at once that the same sound is associated with a different colour in the case of each person and the phenomenon cannot therefore depend on any physical relationship between sound and colour as has been supposed. The process is an individual and psychical one. [See Coloured Plate]

Allied sensations may occur occasionally in subjects who at other times do not experience them. A distinguished physician has kindly allowed me to quote his personal experience in this connexion which occurred when he was suffering from some simple ailment: "The sound of a gong seemed to be *seen* as a pale ochreish disc in front of me a little larger than the full moon with an irregularly dentated edge. This edge was almost black and the border varied in thickness as the sound of the gong increased or diminished as the habit of a gong is. When the gong ceased this spectron persisted for a little time."

I have elsewhere[2] indicated the close association of these colour sensations with the symbols which many people invariably associate with abstract ideas, and with the mental diagrams which always occur with others in connexion with numbers, dates, and serial events. These have been fully described by Galton[3] and Flournoy[4] and are much more commonly met with than colour associations. One "symbol" is frequently met with. Whenever "Justice" is thought of a clear mental image of a face with the eyes bandaged or a pair of scales or both arises in consciousness. The association here is obvious. A friend of mine was unable to think of "value" without appearing to see a particular gable of the private house of the professor of political economy in whose house he had been instructed in the subject. Mental diagrams in connexion with number are more common. Those who possess them are unable to think of numbers except as occupying a particular position on a scale which is projected in front of them, in some cases vertically, in others horizontally. The form remains the same throughout life. From the prominent place that the number twelve takes in nearly all it is probable that the diagrams may be first formed when a child is being taught to tell the time by the clock. Not infrequently the diagram takes the form of a dial, but it is difficult to account for the form assumed in many cases. In Figs. 1 and 2 diagrams are given from different people showing the relative position to them of the numerals and of the months of the year. Some are from cases of my own, the others I have been allowed to reproduce from an unpublished paper by my friend, Miss Mitton, who has made some very interesting observations in this connexion.

A very remarkable case which forms a connecting link between colour associations and mental diagrams has been recorded by Mr. G. E. Thorp in the *Edinburgh Medical Journal* for July, 1894. The pronunciation of a word not only gave rise to a colour sensation corresponding to the vowels contained in the word, but there was a definite form about the coloured "spectron." By kind permission of Dr. Joseph Bell, the then editor of the journal, the forms for four words are here given. Each of these forms as perceived had several colours, and the constant change of these coloured patterns was very bewildering. Mr. Thorp came to the conclusion that in his case the forms were unconsciously suggested by the shape of the buccal cavity which was constantly varying owing to the movements of the tongue in enunciating the words. The forms varied in length according to the rate at which words were sung but alterations of the pitch had no effect on them.

At present the study of these phenomena has thrown little light on the psychical processes connected with sensation. The marked individuality of psychical operations in different people illustrated by them is of interest in connexion with the physiology of speech and the study of aphasia. Probably individuality comes more freely into play in the spontaneous acquisition of speech than in later routine education and may account to a considerable extent for the curious divergences in the symptoms produced in different persons by an exactly similar lesion of some part of the brain concerned in speech processes.

Since these phenomena are most prominent in early life and tend to fade if disregarded it is important to determine whether the faculty is one which is helpful in education and whether attention to these associated sensations should be encouraged or the reverse. As regards its utility I have met with two cases in which people relied on the tint excited to decide whether they had spelt a word correctly or not and with several singers who found the sensations of value in enabling them to hit the exact pitch. A musician writes that

[1] The previous article appeared in THE LANCET on March 31st and April 7th, 1894.

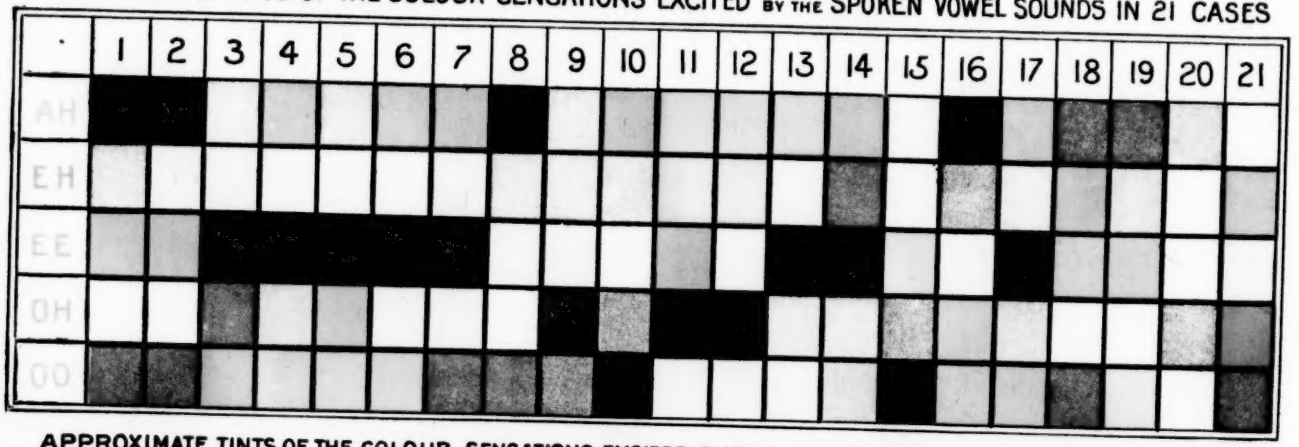
[2] Phonographic Quarterly Review, October, 1895.

[3] Loc. cit.

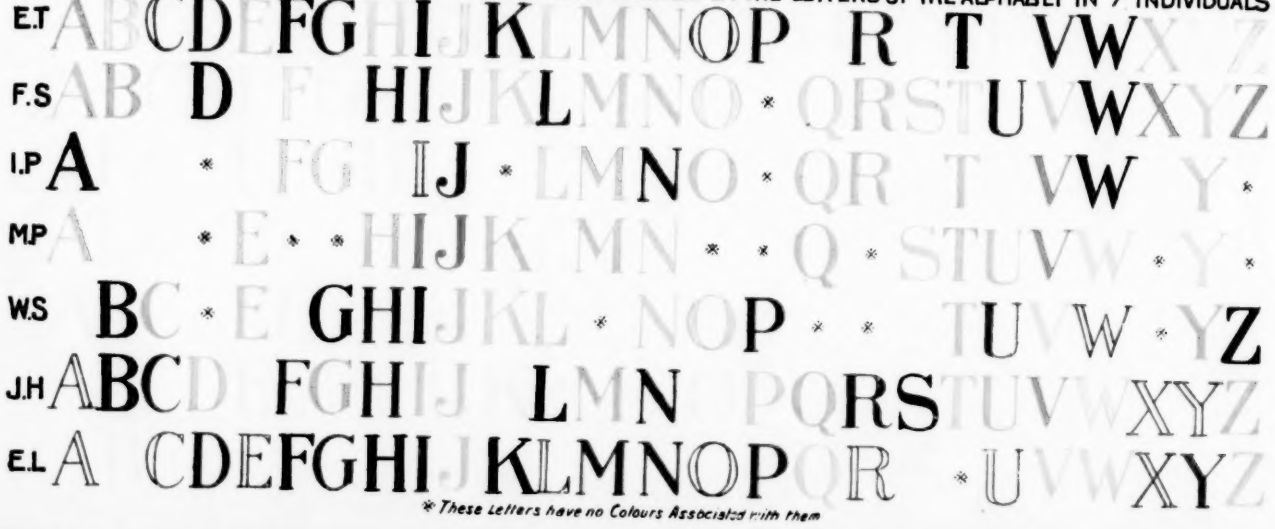
[4] Des Phénomènes de Synopsies, Paris, 1894.

TO ILLUSTRATE DR. W. S. COLMAN'S ARTICLE ON "COLOUR HEARING."

APPROXIMATE TINTS OF THE COLOUR SENSATIONS EXCITED BY THE SPOKEN VOWEL SOUNDS IN 21 CASES



APPROXIMATE TINTS OF THE COLOUR SENSATIONS EXCITED BY THE LETTERS OF THE ALPHABET IN 7 INDIVIDUALS



* These Letters have no Colours Associated with them

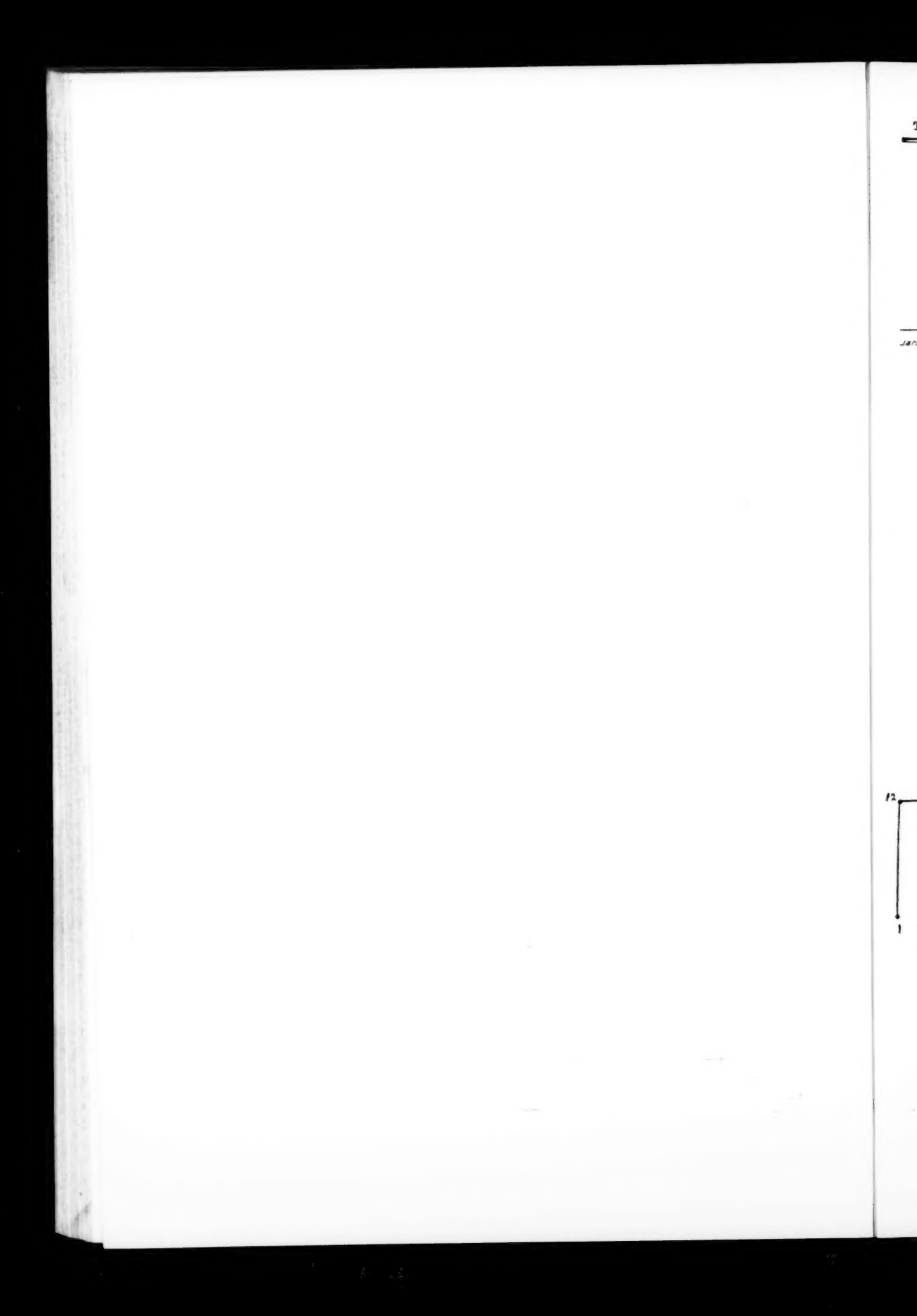

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FIG. 1 *a*.

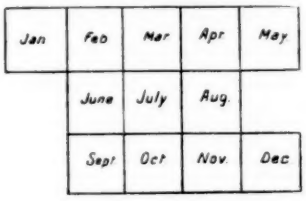


FIG. 1 *b*.

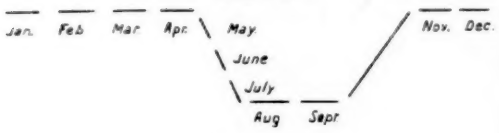


FIG. 1 *c*.

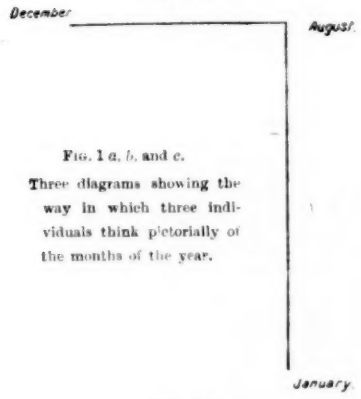


FIG. 1 *a*, *b*, and *c*.
Three diagrams showing the way in which three individuals think pictorially of the months of the year.

FIG. 2 *a*.

FIG. 2 *b*.

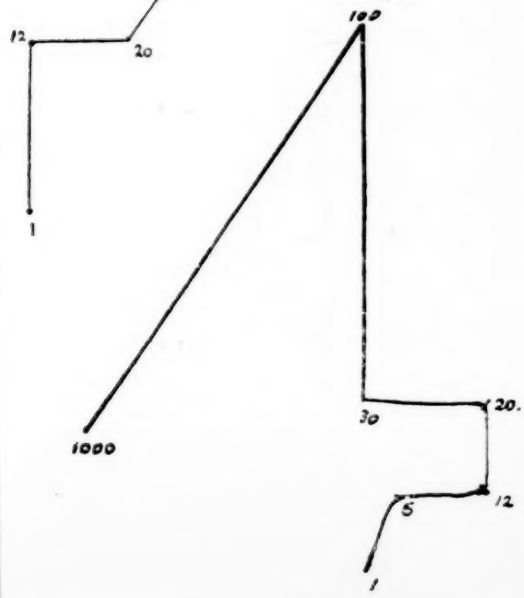


FIG. 2 *c*.

FIG. 2 *d*.

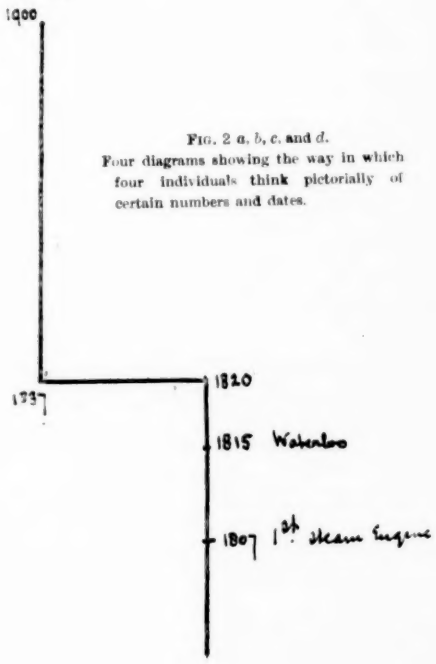


FIG. 2 *a*, *b*, *c*, and *d*.
Four diagrams showing the way in which four individuals think pictorially of certain numbers and dates.

FIG. 3 *a*.

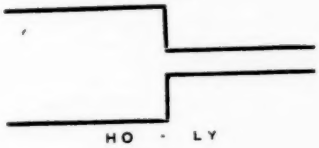


FIG. 3 *b*.

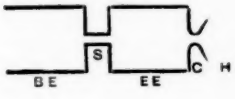


FIG. 3 *c*.

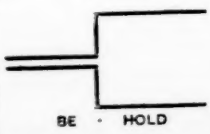
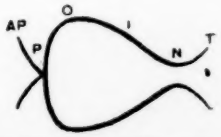


FIG. 3 *d*.



Four diagrams showing thought pictures suggested by certain words. The words are printed below the diagrams.

if he so desires he can strike a note on the piano and then go home and for some time afterwards tune his violin exactly to that piano by simply recalling the tint produced by the particular key. Similar cases are mentioned by Galton, Nussbaumer, and Gruber. Mental diagrams also are found of assistance by those who possess them in mental calculations, in remembering the time of past occurrences, domestic and historical, and often also in learning things by heart.

On the other hand many complain of these sensations as confusing and annoying when attention is paid to them. Thus Mr Thorp writes[1]: "These various forms and colours which during childhood amused me in time became an annoyance. The training received for professional life did not correct the changes in form nor the fantastic jumping about of the colours which were not only different on every degree of the scale but also on the same tone when words were sung. *All sentiment in singing was on this account destroyed* and finally I decided to give up both singing and teaching." It has been pointed out also, I believe by Mr. Galton, that the inability to dissociate an abstract idea from some material symbol must be a serious hindrance to the study of speculative philosophy, and in the same way the inability to think of numbers without form or space relation must be a serious hindrance to those working at higher mathematics. Several of those I have observed who have mental diagrams associated with number have experienced great difficulty with any but the simplest mathematical processes although brilliant students in other subjects. I have not, however, had the opportunity of ascertaining whether the faculty is present among those who have achieved mathematical successes. So far as can be seen, therefore, these faculties seem to be helpful for simple processes—e.g., spelling, singing at correct pitch, learning by rote, and mental arithmetic, but that for higher work such as expressive singing, musical composition, abstract speculation and higher mathematics the sensations are likely to prove a hindrance rather than an assistance, and their possible utility being so limited their systematic development by any deliberate education is hardly desirable.

Wimpole-street, W.

[1] Loc. cit.

ON SPIRAL GROWTH.[1]

BY GEORGE WHERRY, M.C. CANTAB., F.R.C.S. ENG.,
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IT is at first rather difficult in speaking of spirals to describe the direction of any such curve or helix because no convenient words occur to us. Mathematicians often use the expression "clock-wise" or "anticlock-wise" to indicate the way of a spiral coil. Botanists use their term "heliotropism" meaning that the tendril or plant turns the way of the sun. Architects imagine themselves going up a spiral staircase with the newel on the right or on the left hand. Carpenters again judge by their screws. For anatomists a right-handed supination gives at once the direction of a helix and is the easiest way for us to gain a correct conception or to convey the idea.

The expression "heliotropic curve" serves exceedingly well for the botanist as an appropriated term and might pass very well generally if there were no Southern Hemisphere, where the sun takes apparently a different course through the heavens and the plants have to follow the same sun in a different way. The hands of the clock as you face it travel round in the same direction in both hemispheres, but the shadow on the sun-dial passes along the opposite path at the antipodes. It is worth while to notice a tendency, partly superstitious, partly useful, to make turns in the way of the sun. Thus we must not stir a pot the wrong way or the sugar in our tea. Your mayonnaise sauce is ruined if you stir it first one way and then the other. It is a thoroughly useful and orderly rule which makes us pass the decanter in the way of the sun or "through the button-hole" as is taught in Lincolnshire. There are still sun-dances in Mexico and Chili and in Spain in which the turns of the dance are arranged astronomically and the movements of the heavenly bodies are followed in the dance both as to time and direction. Old writers had a delightful word in "widershins" (wider Schein), the opposite way of the sun. Thus Merlin said that[2] "the fair Burd Ellen was carried off by the fairies because she went round the church widershins." The church of course being oriented the lady went round the wrong way in going the opposite way of the sun. Those who are possessed all day by a demon from getting out of bed in the morning on the wrong side are not able to say definitely which is the wrong side, though some superstitious people prefer to have their beds arranged so that they may be waked by the rising sun and thus directed in the last sleep of all their friends place their graves. Those who walk round the chair to change the luck at whist are careless of the way they turn and habitually disregard all fairy lore. "The Queen of the Fairies," Queen Mab, knows better:—

> "She has a little silver wand,
> And when a good child goes to bed
> She waves the wand from right to left
> And makes a circle round its head.
>
> "And then it dreams of pleasant things,
> Of fountains filled with fairy fish,
> And trees that bear delicious fruit,
> And bow their branches at a wish:
>
> "But when a bad child goes to bed,
> From left to right she weaves her rings,
> And then it dreams all through the night
> Of only ugly, horrid things:
>
> "Then wicked children wake and weep,
> And wish the long black gloom away;
> But good ones love the dark, and find
> The night as pleasant as the day."—HOOD.

It is time now to leave the fairies, folk-lore, and solar myths to consider a few facts and to put before you a few puzzles in spiral growth. Take, first, the shells, to all appearance those of common whelks, but their helical turns go in opposite directions. The ancient whelk, now in fossil form (Fusus antiquus) is usually left-handed, while in the present generation of common whelks the shell is always right-handed. These fossils I dug myself out of the red crag at Felixstowe some years ago; they are all left-handed. Nevertheless, among the right-handed shells the fishermen there will occasionally find as a rare specimen a modern whelk of the ancestral type in going a contrary curve. What was there at work in the whelk when the soft young creature began life to give it the twist to left or right? and why are the ancient whelks found going the "wrong" way? The questions remain unanswered, but from observations on spiral growth in plants we feel sure that there are general laws determining these curves—such laws as govern our earth and the universe.

Spiral growth in plant life is a subject of bewildering interest and though worked at by so many great observers, from John Hunter to the Darwins and De Candolle and the modern Germans, there are still many phenomena wholly unexplained. The mere facts of spiral growth in tendrils and twiners would take a long time to mention; still less would it be possible to discuss them or attempt to explain those already made reasonably clear. There is an observation by John Hunter which makes a sort of generalisation about twining plant and in his own words runs thus: "It would appear that weakness in anything that has powers of action within itself produces or stimulates the parts so weak to take all advantage of collateral support. Thus a bean [he means a field bean?] which when strong seems to depend entirely upon its own powers, yet if it grows weakly, as when not in the sun or any other cause acting to hinder strength in growing,—in such if a stick is put into the ground close by it it will twine around it in loose spiral turns."

Climbing plants with tendrils may well claim first attention. Organs are adapted for the ascent and spread of the plant as our climbing irons or crampons are designed for climbing trees or ice except that the tendrils remain behind during the growth of the plant and have no mere temporary function. As the climbing plant grows the apex revolves of the shoot and also of the tendril by means of that remarkable movement called *nutation*—a revolving motion distinct from heliotropism and not arranged for exposure of the plant to the direct rays of the sun. This slow revolving of the apex and of the tendril gives every opportunity for the latter to gain a support. The nutation movement appears to be due to the more rapid growth of cells on one aspect or edge than on the other, which makes a curve in the tendril and revolves it as the growth alters and alternates. Thus

[1] A paper read before the Cambridge Medical Society and illustrated by specimens.

[2] Childe Rowland, edited by Jacobs.

in the bryony a filiform organ grows out from the plant and becomes irritable in such a fashion that, while revolving at its free end exactly as if groping for a prop, if this free end touches a twig it coils round it at once. The contact at the fixed end transmits a stimulus along the tendril which induces a corkscrew twist in the tendril and this spiral will show reversals of direction from a right-handed to a left-handed spiral or *vice versâ*. This reversal of spirals after the fixation has been called a "mechanical necessity," for without the reversal torsion would soon be excessive. This is well seen in the specimen of bryonia dioica. With twinings, stems, and tendrils a strong positive heliotropism—i.e., a turning towards the sun—would often carry them away from a support and would therefore be injurious. It is evidently important that the tendrils should turn towards the wall in order to fix themselves to it and this is accomplished by means of negative heliotropism which drives the tendrils towards the most shaded part, where they then by their groping nutations find points to fix upon or, as in the case of the Virginia creeper, develop their attaching discs. The quickly growing creeper seeks a prop, then, almost as if it could see the way. "Shadow and shine is life" with the tendrils as they curl around the twig or tree with a singular rapidity under the influence of the sun and shade, though it is not necessary to believe the Yankee story of the creeper in his country and how a lazy, long-legged man stretching out asleep in the sun awoke to find that a quick-growing creeper had left the wall and was twining round his knees.

The twining plants have points of distinction when compared with creepers carrying tendrils or similar organs. To name one of some importance—that twining plants only coil themselves round and climb up upright supports. This distinguishes them from tendrils which can grow horizontally or up and down. The majority of twining plants are no longer able to climb actively if their support forms a smaller angle with the horizon than 45°. A further point of difference lies in the fact that twining shoot axes wind themselves round the support in a definite direction according to the species of the plant in each case. The hop and honeysuckle take the form of a left-handed screw; the majority of twining plants, however, twine like a right-handed screw—i.e., from the left below to the right above when the plant and its support are looked at from the exterior. The free pendant apex of the growing shoot revolving in nutation behaves much as if groping towards all points of the compass for support and when meeting a support a part of the apex then curves round it and grows spirally up it. The question of torsions in the true axis in a spiral twist makes another serious complication for the observer. In the twining of twining plants some form of geotropism or influence due to gravitation is of the greatest importance; and in a growing twiner on a rod if the whole pot be inverted so that the twining apex is lowermost the youngest coils of the shoot loosen themselves from the rod and the terminal bud becoming free erects itself and again grows upwards close to the rod. A twining plant will make its spiral curves without a support if the terminal but be steadied by a thread and weight over a pulley so that the apex of the shoot is drawn vertically upwards, but a free horizontally sweeping shoot will make no spiral turns at all. It will not be possible to explain the ways of twiners until we can fully understand how gravity and rays of light act upon processes of growth so that they are able to produce geotropic and heliotropic curvatures. The number of twining plants being over 2000 is far greater than those of tendril-plants; there is thus no lack of objects of interest for the many observers still at work upon them.

In connexion with so-called "mechanical necessity" in spiral curves I will call attention to the spiral form of these carpenter's shavings made with an ordinary plane with the iron set square. Sherlock Holmes is dead, killed by his creator, but that ingenious gentleman, if revived, might observe that this shaving was made by a left-handed man or by a Japanese. The Japanese carpenter works on the opposite side of the bench. The reason of the spiral form of a right-handed screw which is usually seen in shavings is because the workman tends to drive his plane slightly to the left. He plays, as a cricketer would say, a "little to the on"; if he made a perfect stroke fore and aft a simple coil would result; in "playing to the off" or standing on the wrong side of the bench he would make a left handed twist in his shaving. The carpenter is usually all unconscious of the twist that he makes and imparts to the shavings, but it is a pretty piece of evidence of how slight and subtle a force determines the direction of a spiral. It was probably a similar tendency to make coils to accommodate his hands which caused the sculptor of this Greek archaic Apollo to surround it with curls of which forty-seven out of sixty-one turn the way of the clock hands. In other archaic statues the curls are arranged exactly in right- or left-handed spirals according to the side of the head as in the Greek athlete, whose long hair shows a period previous to the Persian War. The sculptor sometimes showed his right-handedness by carving the left side of the face better than the other in these ancient heads. In more advanced art the curls are arranged as in nature—neither stiff nor symmetrical nor coiling all one way. The use of the spiral in ornament among savage nations shows an appreciation of graceful form in plants, but I have not seen any evidence of superstition in following the way of the sun in spiral decorations. It would be important in such observation to remember the path of the sun in the Southern Hemisphere.

One or two more illustrations. Consider the fine pair of horns of the koodoo, a right-handed spiral on the left side and a left-handed spiral on the right side. They are grandly symmetrical and as much rights and lefts and of the same length as were the limbs of the creature that carried them. It is to the advantage of the animal that its horns should be so symmetrical both for offence and for defence. In combination also with the spiral curves the distance apart of the points is a provision of value; when the animal rushes through the bush the horns thrown back act as a wedge and drive aside the branches as the koodoo dashes through the thicket. With regard to hoofs and nails it is astonishing under the influence of moisture and absence of friction how these organs will curve and grow spirally. The influence of moisture is as old as Nebuchadnezzar. "His body was wet with the dew of Heaven, till his hairs were grown like eagle's feathers and his nails like bird's claws." All this came upon the King Nebuchadnezzar and it is a truthful and interesting example of the way in which the growth of the nails is encouraged not only by neglect but by moisture. The growth of his nails was probably not greater than that of a first-class Chinese Mandarin who is really cultivated, for the curves of the nails merely became like bird's claws. If only the growth had continued until the nails assumed a spiral form they might have been compared to corkscrews had bottles then been corked in Babylon. A good specimen to illustrate this tendency (in the Museum at Cambridge) is that of the hind hoofs of a sheep which was shot among boggy soil in the Falklands. Each portion of the cloven hoof is of enormous size and length and twisted spirally about two and a half turns, intertwined, moreover, each with the other portion in a complicated twirl. The contortions, however, take the right-handed twist on one side and left-handed on the other. The hoofs of the ox and the horse from the same soil show this tendency to grow and curve. So far as I can observe in the hoofs the direction of the spirals follows the laws of growth as in the koodoo in growing a different spiral curve on the different sides of the body. With so few examples the observation is of only slight value and anyhow does not apply to Nebuchadnezzar's nails—at least, with our present knowledge.

The effect of want of friction and want of resistance in producing a symmetry and unequal length is here suggested by these perversions. Conversely we manage to grow both our legs of the same size and the same length by exposing them to the same resistances during growth. If encouraged the human nail will grow as the usual claw at first and later will begin to take a twist, as in the Chinaman, and the writer well remembers an example in a queer old bachelor who cultivated his little finger nail by covering it with a cot until it became the wondering talk of the town. The cutting of poor Tom Wither's nail caused as much sensation as when in Athens Alcibiades cut off the tail of his dog. Passing in review these objects of interest now before us, the shells, the shavings, the tendrils and twining-plants, the horns of the koodoo and the contorted hoofs of the sheep, some of my remarks upon them may seem trivial and all unsatisfying, but at least of this I am assured, that many of the problems of spiral growth are deep and difficult and touch upon those great laws which regulate the world. Consideration of such problems sets us thinking of the power that "preserves the stars from wrong" and encourages that constant preference for higher thoughts over lower ones which is the true intellectual life.

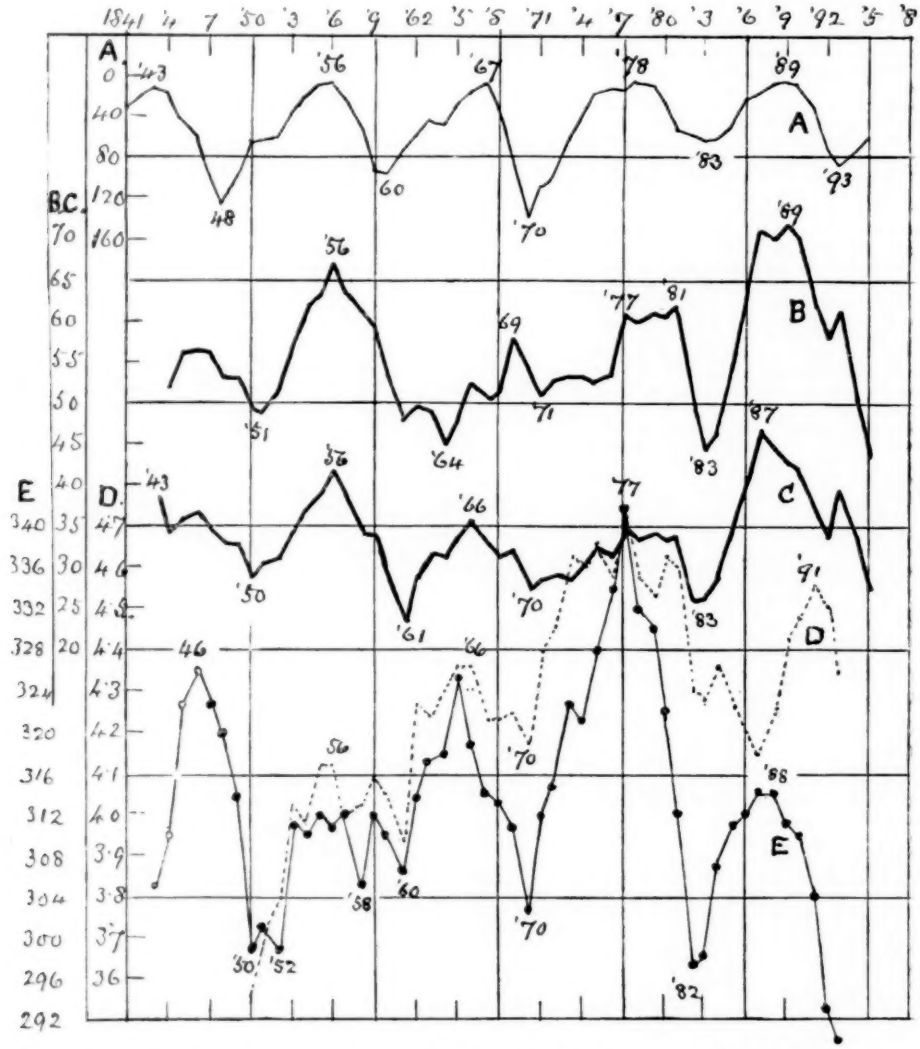
Cambridge.

MORTALITY FROM A COSMIC POINT OF VIEW.

BY ALEX. B. MACDOWALL, M.A.

I WOULD invite attention to the following propositions: (1) Winter cold varies in amount (say number of frost days), with the sunspot cycle, the maxima of cold coming near the minima of sunspots;[1] (2) the mortality from respiratory disease and the mortality of aged persons, *inter alia*, are known to depend largely on the amount of cold; thus (3) the variations in the mortality from respiratory disease and the mortality of aged persons agree to a large extent with those of the sunspot cycle.

Evidence of this is offered in the accompanying diagram, which presents five curves for comparison, as explained.



A. Sunspot curve (inverted) from 1841. B. Smoothed curve of number of frost days in each winter season at Greenwich (September to May) (Here 1844 means 1843 to 1844, &c.). C. Smoothed curve of frost days in each first quarter (Greenwich). D. Smoothed curve of death-rate from respiratory disease, London (per 1000 living). E. Smoothed curve of death-rate of males in England eighty-five years old and upward (per 1000 living of that age-grade). The curve for females is very similar. The smoothing in each case with averages of five—thus, e.g., in curve C the point for 1856 represents the average number of frost days per first quarter of the five years 1854-58. Each curve has a separate vertical scale, except the two frost-day curves, which have the same.

The correspondence is not complete nor, if we consider the matter, should we expect to find it so. But it is of such extent as, in my judgment, to form a pretty strong case. The influence of those waves of cold might probably be traced in other directions.

Gadebridge, Crouch-end, N.

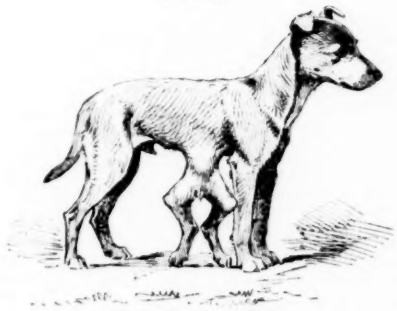
[1] For a discussion of this matter see the Quarterly Journal of the Royal Meteorological Society, July, 1897, p. 243; also Knowledge, October, 1897.

AN INTERESTING MONSTER.

BY CHARLES STEWART, F.R.S., M.R.C.S. ENG.,
PROFESSOR OF COMPARATIVE ANATOMY AND PHYSIOLOGY IN THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND CONSERVATOR OF THE COLLEGE MUSEUM.

THROUGH the kindness of Mr. Peter Taylor, of Manchester, I have had an opportunity of examining the anatomy of the interesting case of polymelian canine monstrosity of which the external features were figured and described in THE LANCET of Aug. 28th, 1897. The malformation affects

FIG. 1.



The animal when alive.

the posterior part of the alimentary canal and the genito-urinary organs of the right side.

The alimentary canal is normal to a point 210 mm. from the anus; the small intestine here bifurcates, both divisions having an ileo-cæcal valve at 30 mm. from the point of bifurcation. The large intestine and cæcum of the left side are normal; the large intestine of the right is nearly twice

FIG. 2

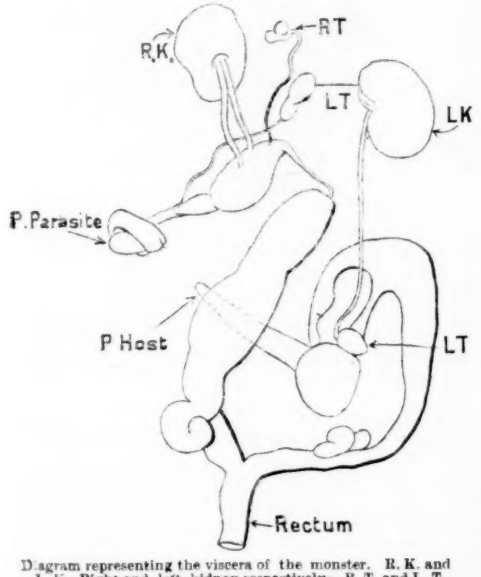


Diagram representing the viscera of the monster. R. K. and L. K., Right and left kidney respectively. R. T. and L. T., Right and left testicle respectively. P. Parasite, Penis of Parasite. P. Host, Penis of Host. One-half natural size.

the diameter of the left and with a cæcum making only one turn; it terminates abruptly in a solid cord 20 mm. long that is continuous with the apex of the bladder of the parasite.

The left kidney is normal in position and with a ureter opening into the bladder in the usual way. The left testicle was in the canal; its vas deferens was normal. The right kidney is more rounded than the left, its posterior border being on a level with the anterior of the left. It has two ureters 34 mm. long that open close together on the right side of the small bladder of the parasite. The right testicle of the parasite is small, its duct opening into the apex of the bladder. The left is of about the same size as the single testicle (left) of the host; its duct opens into the urethra. The penis of the parasite is short and has a distinct urethral opening and os penis. There was no trace of female organs. A large artery that supplies the parasite and sends a small vessel to the right kidney is given off close to the origin of the superior mesenteric.

An ischium and ilium were present on the left side of the parasite with an acetabulum in the usual position, but on the right the ilium is alone present.

THE USE OF HYDROCYANIC ACID AS AN ANTIDOTE TO CHLOROFORM.

BY FREDERICK HOBDAY, F.R.C.V.S.,
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THE extreme frequency with which records of death from the anæsthetic administration of chloroform appear in the professional journals must make welcome the addition of another antidotal agent to the list of those with which we are already acquainted. The idea of using hydrocyanic acid as an antidote to chloroform first suggested itself to me about two years ago when watching the different effects of the two drugs upon the respiratory tract when used to produce death, and particularly from having observed the powerful and rapid excitant result which follows absorption of a toxic dose of the acid. In 1896[1] there was published in detail a list of some forty-three observations upon various animals, including dogs, cats, a horse, sheep, and calf, showing the results obtained by this method of resuscitation and also a few cases illustrating the palliative and sedative effects produced on the respiratory efforts by chloroform inhalations upon animals suffering from overdoses of hydrocyanic acid. Since then I have been able to collect fifteen additional consecutive cases in which it has been successfully used in the College canine clinique after respiration had actually ceased, and I have also had confirmatory reports of its antidotal value from veterinary practitioners in various parts of the country. The results have certainly been in the highest degree satisfactory, so much so that when chloroforming animals the only antidotes we now have at hand ready for use are those of hydrocyanic acid and liquor ammoniæ fortior. As soon as breathing ceases or becomes dangerous artificial respiration is resorted to, the tongue being continuously pulled well forwards in a jerky manner and a full medicinal dose of Scheele's acid placed as rapidly as possible at the back of the throat. When respiration has re-commenced the ammonia vapour is applied cautiously to the nostrils and in the majority of cases a safe termination ensues.

The method of artificial respiration preferred is that of laying the animal in a horizontal position on its right side and pressing the ribs in a short, sharp, jerky manner; we have tried everting the body, but I am convinced that this is a bad method in the dog and cat, as the intestinal organs press upon the diaphragm and limit the capacity of the thorax. We have also tried placing the body in the opposite position with the idea of removing all pressure of the abdominal organs from the thorax and its contents, listening carefully at the same time in each case to the heart sounds with the phonendoscope, but I am firmly convinced that the heart sounds are stronger and less laboured when the body is placed horizontally.

When reasoned out theoretically, in addition to the results of practical work, hydrocyanic acid stands foremost amongst agents likely to prove of antidotal value; for what more

[1] Journal of Comparative Pathology and Therapeutics, June, 1896.

rapid or powerful respiratory stimulant have we? Its use is attended with no more danger than that of strychnia—in fact, in the dog and cat with far less. Its rapidity of action is unquestionable, it is easily absorbed from any of the entrances of the body, and it has the advantage over ammonia that it does not irritate the tissues to which it is directly applied. Besides these things, not only has it an immediate effect in starting the respiratory mechanism, but when once this has commenced the stimulating effect of the acid is maintained for twenty minutes or half an hour and keeps it going until the breathing is able to resume its normal aspect and the patient is out of danger. I am aware that many cases will recover by the aid of artificial respiration alone, but I am perfectly convinced from tests applied to this point, and from an extensive experience of the results we used to obtain with other antidotes before hydrocyanic acid was tried, that the use of the acid gives an enormously higher proportion of successes. When compared with hypodermic injections of strychnine, ether, or saline solution, or the use of amyl nitrite or ammonia vapour, its effect is visibly much more rapid and powerful. Scheele's acid is of course more rapid and powerful than the British Pharmacopœia acid and acts best when given undiluted.

With reference to the method of administration the best way to apply it is undoubtedly by means of a graduated drop tube on the back of the tongue; several models of this have been made at my request by Messrs. Arnold and Sons, and the illustration shows the one which I am now using. Hypodermic injection does not seem to give such good and rapid results, and the direct forcing of the vapour up the nostrils by means of bellows is decidedly dangerous from the risk of administering an overdose. Full medicinal doses are necessary as when an animal is under chloroform the effect of the acid is not visible quite so quickly as when no chloroform has been used. If an overdose be given the judicious use of the anæsthetic vapour will combat and quiet the spasm of the respiratory muscles until the excess of acid has had time to become eliminated from the system. In several cases we had opportunities to test this before experience taught the exact dose. This latter averages in the dog and cat about one minim of Scheele's acid for every seven or eight pounds of live body weight. The object must be to give just enough acid to produce the preliminary excitant effect upon the respiratory centre and, of course, like all antidotes, the sooner it is administered after dangerous symptoms have appeared the more likely is the result to be favourable.

Drop-bottle tube.

The last two cases in which the acid was used are fairly typical of the others and illustrate the effect.

CASE 1.—A Scotch terrier, female, six months old, was being operated upon for the reduction of an umbilical hernia. After the animal had been under the influence of chloroform for eighteen minutes respiration suddenly ceased, the heart still continuing to beat. The restraint of the operating table was at once removed and the animal placed in a horizontal position, lying on the right side. One minute after respiration had ceased three minims of Scheele's acid were administered on the back of the tongue, the latter organ being drawn well forward in a jerky manner, and artificial respiration started. Respirations did not re-commence until two and a half minutes later, but they speedily became strong in character, and four minutes after this the patient was quite out of danger.

CASE 2.—In a mongrel beagle, female, about nine months old, respiration ceased suddenly (10·49 A.M.) Whilst the restraint of the operating table was being removed the breathing re-commenced (10.50 A.M.). Thinking that the animal was recovering no further antidotal measures were then taken, but at 10.51 A.M. the respirations became faint and again ceased. Fifteen seconds later four minims of hydrocyanic acid (Scheele) were placed on the back of the tongue and artificial respiration was applied. Twenty-five seconds after this the respirations re-commenced and this time they were maintained, speedily becoming strong and the patient making a good recovery.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CONGENITAL ABSENCE OF THE RIGHT EYE AND FISSURE OF THE NOSE.

BY W. G. NASH, F.R.C.S. ENG.

THE accompanying illustration is reproduced from a photograph of a child, aged six months, who was born without the right eye and with a fissure of the right side of the nose. On examination the right palpebral fissure was seen to be small and on raising the upper lid the socket looked very much like that seen after removal of the eye except that a small pigmented body about the size of a pea occupied the centre of the cavity. This is the eye the development of which was arrested at a very early stage. The right side of the nose is fissured up to the lower edge of the nasal bone. The right nasal bone is slightly separated from its fellow and causes a slight flattening of the bridge of the nose. Near the tip of the nose is a small projecting nodule very much like the small supernumerary auricles so commonly seen.

As to the cause of this deformity the growth of the eye appears to have become arrested at a very early stage of development and at the same time the external nasal process failed to unite with the fronto-nasal process. The mother

attributes the deformity to the fact that she was frightened by a strange dog jumping on to her bed when she was three months pregnant.

Both these deformities I believe are very rare. Mr. Cantlie[1] has figured a Chinaman with congenital absence of an eye and ear, and there has also been figured[2] a child with double hare-lip and fissure of both sides of the nose. I have a photograph of a dead full-term fœtus with a single hare-lip cleft palate and fissure on the same side between the nose and the cheek extending as high as the inner angle of the orbit, absence of eyelids and apparent defect of development of the corresponding half of the skull. Mr. R. H. Lucy, of Plymouth, in August, 1890, had under his care a child, aged two months, with a congenital cleft

[1] Brit. Med. Jour., 1891, vol. i., p. 1223.
[2] Annals of Surgery, vol. xxiv., p. 210.

of the right side of the nose. The remnant of the right ala nasi stood straight out as a vertically placed cartilaginous ridge; the right anterior choana was much smaller than on the left side. Since birth the cleft had closed somewhat; there was no hare-lip or cleft palate and no maternal impression. Mr. Lucy pared the edges of the cleft in September, 1890, and got a very fair result. He has now lost sight of the child.

Bedford.

ONE OF THE RARER FRACTURES AND DISPLACEMENTS CONNECTED WITH THE ANKLE.

By FREDERICK BROOKE, M.R.C.S. Eng.

SINCE a fracture which has hitherto been of, comparatively speaking, rare occurrence seems likely from its method of production to become more common now that cycling has taken such hold of the public both as a healthful exercise and as an almost indispensable aid to locomotion a short account of the following accident may be of interest.

A man, about forty years of age, was cycling in damp weather on an asphalt road which was in a greasy condition as well as in a bad state of repair when, on trying to avoid a hole in the road, he met with a "side-slip," his left foot as he fell quitting the pedal and becoming lodged in the frame of his machine, the wheel and pedal continuing to revolve; the latter struck his foot while in this position. The following was the condition of the foot and ankle when I saw the case almost immediately after the accident. The foot was displaced backwards and strongly inverted, the outer border pointing directly downwards; the outer malleolus was very prominent and the inner could not be felt satisfactorily, being almost entirely buried; the foot was shortened in front, the tibio-fibular arch being thrown to the front, making a marked projection upon the inner side of the foot. On reducing the dislocation marked crepitus was obtained over the internal malleolus. A careful examination was made along the whole length of the fibula. Pressure applied at various places along the bone ranging from the head to the internal malleolus gave rise to no pain; neither could crepitus be elicited nor irregularity felt along its whole length, though it was difficult to understand how it could have escaped fracture with such a displacement of the foot. Six days after the accident I had the ankle skiagraphed and on examining the skiagram the internal malleolus was seen to be torn off close to the shaft and to have been replaced in very good position while an oblique fracture of the fibula just above the malleolus was clearly defined. There being not the slightest tendency either to inversion or eversion of the upper end of the lower fragment the difficulty of diagnosis will be readily appreciated. The patient may be congratulated on having narrowly escaped a compound fracture since the external malleolus was perilously near making its way through the surrounding tissues.

West Bridgford, Notts.

NOT ON A CURIOUS CASE OF VACCINATION.

By J. H. LAMB, M.B., C.M. Edin.

ON Nov. 21st, 1897, I was called to see a man and his wife, having six weeks previously vaccinated their child. The parents had during this period been attending to the child's arm, which was discharging some clear fluid, and the vaccination marks were covered with brownish crusts. No definite history of inoculation could be got; but on several occasions the husband had attended to the child's arm before getting out of bed and had then micturated without previously washing his hands. On Nov. 17th he complained of some pain and tenderness in the groin and also noticed some swelling in that region. He discovered some marks on his penis but did not take much notice of them. On the same day his wife had pain on micturition but had no vaginal discharge. On the 18th the swelling was more noticeable and the pain and tenderness were much increased. His wife also had a small swelling in the right groin. On the 21st both husband and wife were worse. On examining the husband I found the horizontal inguinal glands were much enlarged on either side and were also painful and tender. On drawing back the prepuce I saw five typical vaccination marks about a week old on the glans penis. The vesicles contained a very small quantity of lymph. There was no urethral discharge. His wife had two vaccination marks one just inside the labia and the other at the margin of the orifice of the urethra, the latter accounting for the pain on micturition. They seemed to be about the same age as those on the glans penis of the husband. There had been no sexual intercourse since the 14th. On the 22nd the conditions were more aggravated in both cases. In the husband's case there was some swelling of the penis and by the 23rd that had become so great that the prepuce could not be retracted and there was some discharge coming from the glans but none from the urethra. On the 27th the glands in both were nearly their normal size and all the local conditions in both husband and wife were not so great, although the wife had still some pain on micturition and a slight discharge from the vagina. On the 29th the husband returned to his work and his wife was able to resume her house duties without any discomfort.

The mode of onset and the subsequent history with their complete recovery in so short a time leave no doubt as to the true nature of the case.

Crediton, Devon.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

TWO CASES OF ANTHRAX.

(Under the care of Mr. H. BETHAM ROBINSON.)

THOUGH by no means rare, anthrax is sufficiently uncommon to render interesting many of the cases, especially with regard to the manner in which the infection has taken place. In both the following instances of the disease there was a very clear connexion with materials which are frequently vehicles of infection—namely, horse-hair and foreign hides. A point which is very strikingly brought out by these cases is the immediate improvement which followed the excision of the infected part. This is doubtless due to the fact that for several days the bacilli are limited to the point where inoculation has taken place. At the present time the prognosis is not considered to be grave if early and complete excision isperformed. For the notes of these cases we are indebted to Mr. E. O. Thurston, surgical registrar.

CASE 1.—A boy thirteen years of age was admitted into St. Thomas's Hospital on June 4th, 1897, complaining of a sore on the cheek. For a week before coming to the hospital he had been employed in cutting up horsehair and on one occasion he had carried a basket containing the hair on his right shoulder but so far as he knew he had not scratched his face with it. Four days before admission he noticed a small pimple on his right cheek just below the malar bone; this gave him no pain, but he suffered from sickness and headache and was obliged to leave off work. The pimple increased in size and a tender swelling appeared on the right side of his neck. On admission a small black slough was seen on the right cheek; it was surrounded by a ring of vesicles; in fact it presented the typical appearance of an anthrax pustule. Its size was about that of a shilling and around the pustule the tissues were brawny and indurated, the induration extending as far as the clavicle. He was somewhat delirious and complained of pains in his limbs; his temperature was 102 8° F. On the day of admission, the patient being under chloroform, the pustule was excised and the edges of the incision were brought together with sutures. The temperature had fallen to 100° by the next day and on the third day (June 6th) it was normal. His general condition rapidly improved. Two days after the operation the swelling and induration

of the neck had much subsided and the individual lymphatic glands could be made out, and by the end of a week the glandular enlargement had completely disappeared. For four days after admission he was given forty minims of liquor hydrargyri perchloridi three times a day. Coverglass preparations made from the vesicles gave negative results, but a culture from the same source showed anthrax bacilli and staphylococci. He left the hospital on the 14th, ten days after admission, and has remained well since.

CASE 2.—A skin sorter, aged thirty-seven years, was admitted to the hospital on June 12th, 1897, for a painful pimple on his neck. For many years he had worked with skins, but about a fortnight before admission he had had to deal with some goat skins which came from Calcutta and he had been told by his employer that they were specially dangerous. Five days before admission he noticed a pimple on the left side of his neck immediately below the ear; it steadily increased in size. He had no other symptoms for three days, when he was seized with severe headache, and later he felt ill, drowsy and sick, but did not vomit. Two days later he noticed that his neck was swollen and he was obliged to leave his work. On admission there was a vesicle with a small area of inflammation surrounding it, but without any definite slough, situated over the centre of the left sterno-mastoid; around this were numerous vesicles extending from the hair to one inch above the clavicle. There was no glandular enlargement. His temperature was 102·4°F. The patient having been anæsthetised the whole area of skin covered by the vesicles was excised, leaving a raw surface about the size of the palm of the hand. The sterno-mastoid lying beneath the central vesicle being indurated a portion of the muscle was excised and pure carbolic acid applied. The whole wound was well washed out with perchloride of mercury lotion (1 in 500). The margins of the wound were brought together, so far as it was possible, with silkworm gut sutures. The condition of the patient improved at once, his temperature fell, and his headache left him. Ten days later the raw surface left was covered with Thiersch's skin grafts and the patient left the hospital on July 16th. On bacteriological examination of the fluid in the vesicles no bacilli could be found.

LEEDS GENERAL INFIRMARY.

A CASE OF DERMOID CYST IN GÄRTNER'S DUCT; DERMOID CYST IN THE SIGMOID MESO-COLON.

(Under the care of Mr. BERKELEY G. A. MOYNIHAN.)

FOR the notes of this case we are indebted to Dr. J. Clough, resident obstetric officer.

A married woman, aged thirty-three years, was admitted into the Leeds Infirmary on Sept. 8th with an abdominal tumour and with a dermoid cyst of the vagina. Ten years ago, and again eight years ago, the patient had been in the hospital suffering from a dermoid cyst in the vagina which had been on each occasion opened and scraped. The cavity had again filled and she sought re-admission wishing for the removal of the cyst. On Sept. 5th, three days prior to admission, she had suddenly and unexpectedly discovered a swelling in the abdomen on the left side. On this day and on the previous day she had a rigor with high temperature and vomiting, and it was during a seizure of vomiting that she had placed her hand upon the abdomen and noticed for the first time the swelling there. Menstruation had been regular up to the previous six months, but since then it had been very excessive in quantity and more frequent, although normal in the duration of each period. On admission abdominal examination revealed a large and prominent swelling, rounded in outline and hard in consistence, situated in the left iliac and hypochondriac regions. Above it reached to about two inches beyond the umbilicus and laterally it extended on the one side just to the middle line of the abdomen and on the other to about one inch outside a vertical line drawn upwards from the anterior superior iliac spine. The swelling was firm and very tense, very slightly moveable from side to side and very tender on manipulation. There was obscure and rather doubtful fluctuation; the skin was not adherent; over the whole prominent area a dull note was elicited by percussion. On vaginal examination a swelling of the size of a Tangerine orange was felt at the upper part in the left wall. On introducing a speculum the surface of the tumour was found to be covered with long coarse hairs; this lump was also tender on manipulation. The abdominal tumour could not be felt on examination here.

On Sept. 11th the dermoid tumour in Gärtner's duct was readily removed by the vaginal route. In spite of the previous operative measures it shelled out quite readily. On cutting open the tumour the contents were seen to consist of a sebaceous, fatty, fibrous, and hirsute conglomeration, the hairs therein being very long and coarse. After this operation the patient did well and on the 18th she was again put under ether and the abdominal tumour was dealt with. After anæsthetisation an incision about four inches long, subsequently enlarged to double that length, was made over the most prominent part of the tumour, which chanced to lie in the position of the linea semilunaris. On exposing the tumour after opening the peritoneum an exploring syringe was introduced with a large needle and some very thick material, porridge-like in consistence and appearance and composed in part of pus and in part of sebaceous material, was with difficulty extracted. On exposing the tumour thoroughly it was seen to originate and to lie in the meso-colon of the sigmoid presenting on the outer side of the bowel and pushing this portion of the gut towards the median line. The sigmoid was very closely adherent to the tumour throughout its length. The peritoneum, the outer leaf of the sigmoid meso-colon, was incised and the tumour was with difficulty shelled out. It was everywhere intensely and firmly adherent and on stripping it away from the sigmoid a small opening in the latter was unavoidably caused. This opening was stitched up by two rows of fine silk sutures. After completely enucleating the tumour the wound in the peritoneum was stitched (as in Langenbuch's method applied to the kidney) to the incision in the parietal peritoneum at the original wound and gauze drainage was adopted.

The patient was collapsed after the operation very profoundly and three pints of saline solution were introduced into the median basilic vein with great benefit. For the first twenty-four hours her general condition decidedly improved, but on the 23rd persistent and wholly uncontrolable vomiting set in and there was after removal of the gauze packing some questionable fæcal discharge from the wound. On the 24th her condition became worse and she died from collapse and exhaustion on the 25th.

At the post-mortem examination the wound in the sigmoid was closed and firmly united and the cavity seemed in a fair way for healing. The pelvic organs were normal. The abdominal tumour contained sebaceous matter and hair, with a large amount of solid material. The contents were infiltrated with pus and the whole mass seemed in a state of acute inflammatory disorganisation.

Remarks by Mr. MOYNIHAN.—The points worthy of special note in this case are:—1. The alleged sudden appearance of the abdominal tumour. This I well remember to have seen in a case of ovarian dermoid in a patient aged twenty-seven years, who, so far as she was aware, was well in all respects up to a moment when she was assailed with a rigor with vomiting, and had on investigation a temperature of 105° F. After this attack she discovered for the first time a swelling of the size of a cocoanut in the right lower abdomen which on removal proved to be an ovarian dermoid. It may be that the high temperature sets up in a dermoid tumour a latent activity of development and produces, as in both these cases, an acute inflammatory reaction in the tumour attended by a sudden increase in size. On the other hand, the on-coming series of changes in the tumour due to other, not obvious, causes may be the cause of the constitutional distress and disturbance. 2. The occurrence of two dermoids in the abdomen. Dermoid cysts in the duct of Gärtner are uncommon and those in the meso-colon decidedly rare. I have discussed this subject of mesenteric dermoids fully in the *Annals of Surgery*, July, 1897, but it is perhaps worth recalling that until Mr. Langton's case was recorded where a dermoid was removed by abdominal section from each ovary and a third from the mesentery the presence of a cyst of this kind in the mesentery was attributed to an extension of the tumour from the ovary. In my case, as I have remarked, the ovaries were found to be perfectly healthy.

GLASGOW WESTERN INFIRMARY.

A CASE OF EXTENSIVE SEPTIC THROMBOSIS OF THE LATERAL SINUS FOLLOWING INFLUENZA; OPERATION; RECOVERY.

(Under the care of Mr. WALKER DOWNIE.)

AT one time thrombosis of the lateral sinus was considered to be certainly fatal, but now many cases are treated successfully, yet even at the present day the result will depend in a great degree on the extent of the thrombosis and on the possibility of removing all the septic material. In order to be able to clear out the infective clot without risk of hæmorrhage ligature of the internal jugular vein is sometimes performed, but this may be unnecessary as in the following case. The connexion of middle-ear disease and its complications with epidemic influenza has been recognised now by many observers, but so far as we are aware no cases have been recorded in which the bacteria present in the clot have been investigated. It is very desirable that this should be done.

The patient whose case is here described was a man, sixty-six years of age. He was admitted into the Glasgow Western Infirmary on Dec. 14th, 1896, under the care of Dr. Alexander Patterson, who on the same day desired Mr. Downie to see the patient and to take charge of the case. The patient complained of severe pains over the right temporal region, of frequent attacks of giddiness accompanied at times by sickness, of occasional loss of memory, and of slight discharge from the right auditory meatus. Five years previously he had a severe attack of influenza, prior to which he had had no aural trouble at any time and his hearing had always been good. On recovering from this illness he found that he was deaf on the right side and although he observed no discharge he had slight pain in the right ear together with what he described as a "cold feeling over the bone behind the right ear." Some months later he had a discharge from his right auditory meatus and this was followed by a swelling over the right mastoid which was incised by the medical man in attendance. A quantity of pus escaped, the swelling subsided, and the incision healed as if it had been a mastoid periostitis. But while the wound over the mastoid healed discharge continued to escape from the ear and he suffered from attacks of severe pain over the right side of the head which came on first at intervals of months but latterly of days only. In October, 1896 (two months previous to the first time Mr. Downie saw him) he had become unconscious while suffering from one of these attacks and he remained so for two days, when, following the escape of a quantity of pus from the auditory meatus, he regained consciousness. From that time onwards pain was always more or less present, and there were occasional exacerbations during which attacks he sometimes felt dazed but was never again rendered unconscious.

On testing his hearing power the patient was found to be totally deaf to the voice, to the watch, and to the sounds of the vibrating tuning-fork by aerial conduction on the right side. The vibrating tuning-fork when placed over the vertex (bone conduction) was said to be heard equally on the two sides. The man however was very ill when the tests were applied so that this latter statement is not of very much value. On making an examination of the affected ear the meatus was found to contain a small quantity of fœtid pus, the tympanic membrane generally was thickened and perforated, the perforation being small and circular and situated immediately below and in front of the short process of the malleus. The size and site of the perforation favoured the retention of fluid within the middle ear. The mastoid area was somewhat prominent on the right side as compared with the left and slightly tender on pressure particularly over the scar of the early incision, but there was no fluctuation the bone being hard and firm.

On Dec. 17th, three days after admission, the right side of the head having been shaved and otherwise prepared for operation, an incision was made over the mastoid through the scar of the former incision and carried well upwards, the intention being in the first place to open into the tympanic or mastoid antrum. On separating up the periosteum, however, a small area of necrosed bone was found which, on being fully exposed, was seen to correspond with the level of the lateral sinus. A portion of this bone was then carefully removed by means of mallet and chisel and as soon as the sinus was opened a quantity of very foul-smelling thick purulent material escaped. The opening thus made was enlarged by the removal of all necrosed bone and the exposed sinus was carefully examined and thoroughly cleansed. A great part of the contents was of a curdy character with broken down blood clot which had to be scooped out. This completed, the tympanic antrum was opened and cleared of its purulent contents, the operator making sure that nothing of a septic nature remained lodged in the middle ear or in any of the bony cavities communicating with it. The result has proved that this was accomplished satisfactorily. The cavities were washed out with carbolic lotion; portions of the skin were turned in over the edge of the opening in the lateral sinus, and the sinus, the antrum, and the middle ear were packed with iodoform and boric gauze.

On the morning of the operation the temperature was 98·6° F., the previous morning it had been 99°, and on the evening of the day of operation it was 97·6. It is interesting to note that throughout his convalescence it continued to be somewhat subnormal, being 96·4° on two occasions and this without the slightest untoward symptom or even complaint of discomfort. The chart showed that from Dec. 14th to Jan. 8th inclusive the temperature exceeded 98·4° on only five occasions, being 98·8° on Dec. 15th, 99·0° on Dec. 16th, 98·6° on Dec. 17th, 99·0° on Dec. 29th, and 98·6° on Jan. 7th. The two lowest temperatures were 96·4° on Dec. 30th and on Jan. 2nd.

The operation was immediately followed by disappearance of pain and giddiness, and the raw surfaces healed quickly. He was dismissed from the infirmary at the end of three weeks from the date of the operation (Jan 8th), and from that date there has been complete absence of discharge and other symptoms of which he formerly complained. In November, 1897, he reported himself stating that there had been no aural trouble, no discharge, no pain, and no giddiness since leaving the infirmary ten months previously. The opening into the lateral sinus, which admitted the forefinger, had firm edges and the interior of the cavity, the capacity of which was equal to four drachms, was lined throughout with epithelium continuous with the portions of skin which at the operation were turned in to "paper" part of the walls. The patient's general health had greatly improved and he had been at his work regularly during the greater part of the previous nine months.

Remarks by Mr. DOWNIE.—Some years ago I drew attention in THE LANCET[1] to the frequency with which epidemic influenza affected the middle ear and the adnexa in those who had previously no aural complaint. During that epidemic my experience was that the aural affection came on suddenly during convalescence and that the inflammatory process was of a rapidly destructive character. The patient whose condition has just been considered suffered, peculiarly, from influenza during that particular epidemic and he had suffered from the resulting aural complications which appeared during convalescence, in which destruction of tissues had been widespread, ever since calling in the end for serious operative interference. I publish the case as an example of extensive and deep-seated mischief beginning as a middle ear catarrh, the sequela of influenza, and as an instance of complete recovery following an extensive septic thrombosis of the lateral sinus.

[1] THE LANCET, May 28th, 1892.

THE fifth annual "Santa Claus" distribution of food, clothing, toys, &c., to 2000 of the poor children of Cardiff and the neighbourhood took place on Dec. 22nd and 23rd last.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox announce for publication this week a new work on "Nasal Obstruction, the Diagnosis of Various Conditions causing it, and their Treatment," by Mr. Walsham. They will also publish during the present month a new work by Dr. Harry Campbell on "Respiratory Therapeutics"; an "Anglo-French Medical Dictionary," by Mr. de Méric; a new student's manual on "The Essential Outlines of Surgery," by Mr. Spencer, of Westminster Hospital; one on "Medical and Surgical Diagnosis," by Mr. Parkinson; and a new edition of Dr. Rabagliati's "Air, Food, and Exercises."

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Fragilitas Ossium.—Spina Bifida.—Gumma of Pituitary Body.—Cystic Disease of Liver and Kidney.

A MEETING of this society was held on Dec. 21st, the President Dr. PAYNE, being in the chair.

Dr. L. GUTHRIE showed an example of Fragilitas Ossium from a child in whom five fractures of the long bones were discovered after death. The left femur, which was exhibited, showed that the walls of the shaft were thin and so soft as to be easily indented by the finger and the medullary cavity was enlarged. Immediately below the lesser trochanter was a complete transverse fracture with little displacement owing to the interlocking of the serrated ends. There was a considerable amount of callus thrown out. The child was a congenital imbecile and partially paralysed. Dr. Guthrie remarked that cases of spontaneous fracture such as he believed this to have been were most frequently met with in association with mental defect.—Mr. EDGAR WILLETT thought that the term fragilitas ossium was too loosely applied. These cases in children ought to be separated from those occurring in adult life, a large proportion of which were due to deposits of malignant disease.—Mr. JACKSON CLARKE agreed that cases of fragilitas ossium required differentiation into groups. He had met with a case similar to that described by Dr. Guthrie, which he thought was due to congenital syphilis from which the child was suffering. In his case also there was a large amount of callus. He agreed that mental defect was often associated but that also was often due to syphilis. In Dr. Guthrie's case from the amount of blood effused into the medulla he would think that a scorbutic condition might have contributed to the condition.—Mr. TARGETT also drew attention to the hæmorrhage into the cancellous tissue and thought that this, with the history of bruises during life, pointed to scurvy rickets.—Dr. GUTHRIE, in reply, agreed that scurvy played an important part in the production of the fractures in his case.

Mr. R. HENSLOW WELLINGTON showed a specimen of Spina Bifida removed from an infant who died when three weeks old. When the child was born there was a cystic tumour along the right iliac crest just reaching to the middle line. When this was emptied by aspiration a smaller independent cyst could be felt within it. On a second occasion this second cyst was punctured and twitchings and signs of irritation of the spinal cord occurred. At the necropsy it was found that the sacrum was twisted half round. The lumbar and sacral spines were defective and left an oval aperture through which the outer cyst protruded, the wall being formed of skin and dura mater. Within this was an independent cyst which appeared to be formed by distension of the arachnoid sac, or it might have been a syringomyelic cyst. No trace of spinal cord could be discovered in its wall. There were extra centres of ossification in the bodies of the lumbar vertebræ and there was also a malformation of the liver, which had an extra lobe, and the gall-bladder was so low down as to be close to the urinary bladder. The specimen was referred to the Morbid Growths Committee.

Dr. WILLIAM HUNTER showed a specimen of Gumma of the Pituitary Body. The patient was a woman, forty-seven years of age, who died from pyonephrosis and who had shown no signs referable to the pituitary body during life. There were well-marked signs of syphilis in other parts. The pituitary body was of the size of a marble, firm and yellowish, with a firm, fibrous capsule and a caseous centre. Microscopically it showed the characters of gumma. There were no giant cells and no tubercle bacilli. Gummata of the pituitary body were rare. One had been shown to the society by Mr. Cecil Beadles and Virchow and another German observer had also recorded instances.

Dr. G. F. STILL read a paper on a case of Cystic Disease of the Liver and Kidney in an infant, eight weeks old, who was under the care of Dr. Lees at the Hospital for Sick Children, Great Ormond-street. The infant was an eight months' child and the abdomen was noticed to be enlarged fourteen days after birth. The child was much wasted. The enlarged kidneys could be felt during life and the urine was highly albuminous. There was never any jaundice. The child died with symptoms of uræmia. The kidneys weighed fifteen ounces together as against a normal weight at that age of about one ounce. The capsule stripped off easily. On section the organ had a peculiar translucent appearance and was seen to be honeycombed everywhere by minute cysts which were separated one from another by minute septa. The pelvis and ureters were normal. Microscopical sections showed numerous dilated tubules lined with cubical epithelium separated by trabeculæ of fibrous tissue which was not highly cellular. Normal glomeruli and tubules could be seen in places. There was no sign anywhere of concentric thickening of Bowman's capsule such as occurred in inflammatory affections of the kidney. The liver was not enlarged; it weighed five ounces. There were no cysts visible to the naked eye. Microscopically there was great increase of the connective tissue which was fibro-cellular and enclosed lobules and groups of lobules irregularly but was not inter-cellular. Embedded in it were numerous irregular branching cavities lined by columnar epithelium. These were not limited to the portal spaces but occurred beneath the capsule and even within the lobules. Dr. Still discussed the various theories which had been adduced to account for the cystic condition of the organs and particularly combated the inflammatory view. Had it been inflammatory in the liver there would have been jaundice and further the fibrosis would have been progressive. In the kidney not only were the signs of previous inflammation absent but the kidneys had not been formed for a sufficient length of time for post-inflammatory fibrosis and cystic change to occur to the extent shown in this specimen, as this was a process requiring many months. Dr. Still regarded the condition as due to irregular development, there being overgrowth of the mesoblastic elements of the organs which led to cystic dilation of the tubules and ducts.—Dr. H. D. ROLLESTON said that he had listened with great interest and admiration to Dr. Still's paper but he still held the view that the condition was inflammatory and allied to biliary cirrhosis although he admitted that it was difficult to account for the absence of jaundice. He had recorded several cases and in one in addition to cystic disease of the liver and kidneys there was an occipital meningocele and in another there was cystic disease of the pancreas. He thought that the cysts found in unusual positions were due to new formation, and it had been shown that the bile-ducts might be so formed in inflammatory cirrhosis. No explanation would be satisfactory which did not explain the occurrence of cysts alike in the brain, pancreas, liver, and kidneys, and he still thought that the inflammatory hypothesis was the most satisfactory one.—Mr. TARGETT remarked on the uniformity of the appearances met with in specimens of cystic kidneys. Many of the specimens he had seen were from still-born children. The duration of life would depend on the amount of normal tissue present. The ureters were sometimes ill-developed. He agreed with Dr. Still's developmental explanation.—Dr. PARKES WEBER said that although the inflammatory theory was very plausible there seemed very little direct evidence in support of it. In that way it was like the theory that valvular malformations in the heart were due to intra-uterine inflammation of which, however, there was often not the slightest sign.—The PRESIDENT said that whichever theory was adopted it was clear that the disease must begin at an early period of fœtal life. If the ducts were obstructed just before birth there would be definite symptoms just as in the case of biliary cirrhosis. The process must begin before the secreting and excreting parts were connected. It must be remembered that a temporary injury, using the term in a wide sense, might bring about inflammation and all trace of it might disappear.

EPIDEMIOLOGICAL SOCIETY.

Leprosy in China, the East Indian Archipelago, and Oceania.

A MEETING of this society was held on Dec. 17th, 1897, Professor J. L. NOTTER, M.D. Dub., President, being in the chair.

Mr. JAMES CANTLIE read a paper on the Physical and Ethnological Conditions under which Leprosy occurs in China, the East Indian Archipelago, and Oceania. When at Hong-Kong he had by personal and postal inquiries obtained

information from all parts of the area through which leprosy occurs from the western borders of China to the furthest islands of the Pacific. There was a general consensus of opinion among all competent observers that leprosy was a bacillary and therefore probably communicable and inoculable disease closely allied to, if not a specialised form of, tuberculosis; it was not proved to be hereditary or transmitted with vaccination and it was independent of soil, climate, or food. On the other hand, it was essentially a Chinese disease extending from its focus in the south-eastern provinces to every region visited by the lower class of Chinamen and to no others, the Japanese, Malays, and some Mongolian races suffering in a less degree, but the aborigines, black or brown, never, and having indeed no word for the disease in their languages. The alleged exceptions would not bear examination, being either cases of scrofulous abscesses, eczema, lupus, &c., or wholly imaginary like the two large hospitals with 200 beds each at Tientsin described by Doolittle and Newman but nowhere to be seen. The rapid encroachment of the sand from the desert on the cultivated and completely disafforested northern provinces had driven the sturdy Manchus southwards, crowding out the weaker but more intelligent Chinamen of the south and compelling them to seek employment beyond the seas. The coolies belonging to the poorest and lowest class esinclude many actual or incipient lepers who spread the disease in districts where it was unknown while the Chinese settlers were merchants, planters or tradesmen. Leprosy, however, was not met with in every part of China, being absent from twelve of the eighteen provinces of the "middle kingdom," while its distribution seemed independent of the climatic conditions of north and south or of high and low-lying lands or of extremes of temperature and rainfall. In China proper there was a leprous area conterminous with the peninsula and province of Shantung; a second on the Yangtse around Hankow; a small patch in Szechuen bordering on Tibet probably infected by hill-men from India; and lastly, the great southern area embracing the provinces of Fokien, Quangtung, and Quangsi, whence three-fourths of the emigrating coolies were drawn. There was no leprosy at Pekin, Shanghai, Amoy, &c., but Chefoo, Hankow, and Canton were in the hearts of the larger areas and the strict inspection of all coolies at the ports of departure and arrival was the duty of all European authorities. Northwards Japan was deeply involved, though in Yezo only the half-castes among the Ainos were attacked. In Corea the sufferers were mostly Chinese and the disease was confined to the southern portion, being quite unknown along the coast line northwards, where the natives have been exterminated by the Russians. In the south it extended over the whole of Tonkin, Annam, Siam, Burma, and the Malayan states, though in the latter the Malays suffered much less than the Chinese, who in many places now outnumbered them, and the aborigines or savages escaped entirely. The same might be observed in Formosa, Hainan, Sumatra—where the Achinese were exempt—Java, and Celebes, where it was confined to a small portion of the south-west coast, the seat of the trade in Macassar oil. In Borneo it was introduced with the Chinese in 1888 and disappeared with their expulsion after the rising at Sarawak. Throughout the Sunda Islands beyond Java, Papua, and the Melanesian groups, as well as those scattered over the Pacific Ocean, whether the people were Negritos or belonged to the brown aboriginal races, leprosy was unheard of save when and where European settlement had attracted Chinese labour; the rush for gold in California led to the development of the Sandwich Islands and a large immigration of Chinese and Japanese, while the native race proved unusually susceptible to leprosy, the regulation of which at present absorbed nearly half the revenue. There was a little leprosy in New Caledonia and in one of the Fiji Islands limited to the Chinese and to the single tribe willing to work with them in the fields; it had disappeared from the Friendly Islands; and of three lepers who once came to Samoa one died and the other two were promptly sent back to China.

Dr. SIMPSON (late of Calcutta) remarked that in New South Wales fifty-seven lepers had been found among the Chinese and two among Europeans associating with them. There were now no lepers in the Japanese colony at Hawaii.

Dr. PRINGLE said that the Indian hill-tribes threw leprous women into the mountain torrents, to escape which fate the women went to the plains as prostitutes.

Mr. CANTLIE, in his reply, remarked that women in China were active disseminators of infection, "selling the disease," as they called it, in the belief that they could free themselves by coitus with a healthy man. The police at Hong-Kong sent back to the mainland every leper they found in the town.

SOCIETY OF ANÆSTHETISTS.

New Method of Combining the Vapours of Chloroform and Ether.—Protracted Anæsthesia following the Administration of Nitrous Oxide Gas.

A MEETING of this society was held on Dec. 16th, the President, Dr. DUDLEY BUXTON, being in the chair.

Mr. TYRRELL read a paper on a New Method of Combining the Vapours of Chloroform and Ether and pointed out that occasionally difficulties arose in giving ether to certain patients. He thought that the administrator should be able to control the proportion of the anæsthetic employed. He used two Junker's bottles, giving either chloroform or ether singly or combined. To meet the condition of oxygen starvation in prolonged operations and in fat persons with feeble circulation he allowed a small stream of oxygen to enter the face-piece, so providing for the need of aeration. The apparatus consisted of two Junker's bottles fitted with tubing controlled by taps so as to supply either chloroform or ether or both to the face-piece. The chloroform was given in the ordinary way and ether was given if occasion arose either simultaneously with, or instead of, chloroform. The method was advocated for operations on the young, for thyroid tumours with dyspnœa from pressure, for removal of glands in the neck in young children, in operations for empyema, and in some eye operations.—Dr. GRANT MORRIS said that by this method the after effects of the anæsthetic were obviated.—The PRESIDENT said that he had adopted the method of giving oxygen with ether for two years and found it very satisfactory. He hoped to bring his results before the profession shortly.—Mr. E. WHITE, Mr. J. WHITE, Dr. LOW, Dr. SILK, Dr. COOK, and Mr. CARTER BRAINE took part in the discussion and Mr. TYRRELL replied.

Dr. FLUX read the notes of a case of Protracted Anæsthesia following the Administration of Nitrous Oxide Gas. The patient was a girl aged nineteen years, apparently in normal health; the gas was given with a view to the extraction of teeth; and the usual phenomena of nitrous oxide gas narcosis were present except that consciousness did not return for an hour and twenty minutes in spite of vigorous efforts to arouse her. Consciousness when it returned was complete and occurred abruptly. The patient had fainted in the waiting-room before the administration of the anæsthetic.—Mr. TYRRELL considered that the case might be one of hysteria.—Mr. CARTER BRAINE and Mr. STARLING regarded these as cases of hystero-epilepsy and Mr. HILLIARD and Mr. E. WHITE thought the case might be of the nature of a hypnotic trance.—Dr. FLUX having replied the meeting closed with the usual votes of thanks.

MIDLAND MEDICAL SOCIETY.

Puerperal Fever.—Exhibition of Cases and Specimens.

A MEETING of this society was held at the Medical Institute, Birmingham, on Dec. 1st, 1897, the President, Mr. J. W. TAYLOR, being in the chair.

Dr. THOMAS NELSON read a paper on the Nature and Prevention of Puerperal Fever.

Dr. SHORT showed a case of Writer's Cramp affecting both hands. The patient, a clerk, thirty-three years of age, had the neurosis of his right hand eleven years ago, with marked wasting of the intrinsic muscles, which condition has persisted and is plainly seen now. He taught himself to write with the left hand. This year the left hand became affected with commencing atrophy of the thenar and hypothenar muscles. He was much depressed mentally. Electrical reaction showed diminution to both currents. Treatment with electricity, regular massage, and practice in shoulder writing had improved his condition and had obviated the necessity for leaving off work.

Dr. RUSSELL showed two patients—mother and daughter—suffering from Idiopathic Muscular Atrophy. The family history extended through three generations and the complaint showed a marked tendency to diminish in the

successive generations. A slight improvement had been noted in one patient under electrical treatment.

Dr. PUESLOW showed a Strangulated Ovarian Tumour removed during pregnancy. The patient (who had been married four years and had had one previous pregnancy which had ended in abortion at the fourth month) was after seven weeks' amenorrhœa seized with severe abdominal pain, vomiting, and collapse, with distended abdomen dull to percussion over its lower half. The diagnosis was doubtful, ruptured tubal pregnancy being suspected. As the symptoms were grave the abdomen was opened. An ovarian cyst was found and removed. There was twisting of the pedicle and one part of the cyst was almost black from strangulation. The uterus was enlarged and evidently gravid. The patient made a good recovery and the pregnancy was now (nine weeks after operation) pursuing a normal course.

Mr. J. FURNEAUX JORDAN showed two specimens of Tubal Pregnancy. The first was unruptured and the site was at the uterine end of the tube, the outer end being free and patent. The patient from whom it was removed had eight years previously had an Alexander's operation performed and four years ago had a hydro salpinx removed. The operation for the tubal pregnancy was performed on Sept. 2nd and the patient's recovery, though protracted, is now complete. The second specimen was one of tubal abortion; the hæmorrhage from the outer end of the tube had taken place slowly into a cystic ovary to which the tube was adherent. The patient made a rapid recovery from the operation and is now quite well.

Dr. MARRIS showed specimens of new absorbent dressings—viz., Robinson's Cellular Wadding and Robinson's Dressing and Gauze. The wadding is made of pine wool and is recommended for very free discharges. Robinson's dressings contain white wool evenly mixed with the cellular material and have all the absorbent qualities of white absorbent wool. They can be faced with gauze (as in Robinson's tissue) after the fashion of Gamgee tissue.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Induction of Premature Labour.—Origin of the Placenta.

A MEETING of this society was held on Dec 8th, 1897, Dr. HALLIDAY CROOM, President, being in the chair.

Professor SIMPSON showed: 1. A Parovarian Tumour which was Removed with Ovary and Tube; the latter had a double fimbriated extremity. The appendages of the other side were also removed for a small parovarian tumour; this tube wasalso found to have a double infundibulum and a small lipoma was present. 2 Uterus and Fibroids removed by vaginal hysterectomy. 3. Uterus removed by vaginal hysterectomy for malignant disease. 4. Uterus and Appendages removed by vaginal hysterectomy with an ovarian abscess on one side.

Dr. MILNE MURRAY exhibited a specimen of Meningocele.

Dr. BREWIS showed a Uterus removed by vaginal hysterectomy for adeno-carcinoma of the body; also another Uterus similarly removed for cancer limited to the cervix.

Dr. J. W. BALLANTYNE showed (1) a Fœtus with Exomphalos and Double Genital Tubercle; (2) a fœtus with large Encephalocele; these two cases had presented by the morbid part; (3) a Fœtus with Ascites and Distended Bladder, where the urethra was dilated to an occlusion close to the point of the penis; and (4) a Placenta with a large Hæmatoma.

Dr. D. W. JOHNSTON (Johannesburg) sent (1) specimens of a case of Hypertrophy of the Liver with Dropsy in the Fœtus; (2) two specimens of ruptured Extra-uterine Gestation removed by operation; and (3) Uteri and Appendages of Baboons.

Dr. HAIG FERGUSON showed an Anomalous Placenta and a Missed Abortion.

Dr. JOHN MOIR read a paper on the Induction of Premature Labour. He had received his teaching from Professor Hamilton, of the Edinburgh University, the predecessor of Sir James Simpson. At the latter end of the last century the practice consisted of puncturing the membranes, allowing the liquor amnii to escape and then waiting till the pains came on. Dr. Hamilton discountenanced the rupturing of the membranes and recommended that they should be left entire for the sake of the child. He advised the separation of the membranes from the os and cervix and if pains did not come on then the drawing off of a small portion of the liquor amnii. This was effected by passing a small silver catheter some inches between the membranes and the wall of the uterus. The point of the catheter had been cut off, and when it had been inserted sufficiently far the point was turned towards the membranes and a stiletto passed through it to effect puncture. A flow of liquor amnii occurred through the catheter, but only a few ounces were permitted to escape. The pressure of the walls on the minute puncture prevented any further flow after withdrawal of the catheter. Labour generally supervened in a day or two. If not this procedure was assisted by the introduction of a gum elastic catheter between the membranes and the uterus and left there or re-introduced if it escaped. Dr. Moir had occasional recourse to sponge or tangle tents or a small Barnes' bag. He also considered the hasty accomplishment of the premature labour as detrimental to the interests of the child. The separation of the membranes might be required daily for some days before labour was induced; in this way the parts were gradually dilated and softening of the canal took place. He had induced labour on twenty-six different women, from once up to eight times in one case; in all on seventy-two different occasions. He had brought on labour once in 8 cases, twice in 3 cases, thrice in 10 cases, four times in 1 case, five times in 3 cases, and eight times in 1 case. Once twins were born; and of the seventy-three children fifty-nine were born alive, one died in a few hours, and thirteen were stillborn. Of the stillborn eight were the children of women with very deformed pelves; the others were shoulder or breech cases. Twenty-four of the mothers recovered; his last 2 cases died. His earliest case was in 1833. He thought the results obtained by these methods compared favourably with the recent practice.

Dr. A. H. F. BARBOUR read a paper on Leopold's Account of the Origin of the Placenta. Leopold's atlas, "Uterus und Kind," is the most important contribution made to the sectional anatomy of obstetrics during the past year and by far the most important that has yet been made to the anatomy of pregnancy as distinct from the anatomy of labour. It contains thirty plates with sections of the pregnant uterus from the first week up to full time. The most valuable one is that of the uterus and ovum of nine days' conception. The patient was a multipara, thirty years of age, and was operated on for cancer ten days after cessation of menses. On opening the uterus to ascertain how far the cancer had extended Leopold was struck with the congested appearance of the mucosa and a slight elevation of the size of a lentil seed on the posterior wall near the fundus. The drawing of the uterus laid open shows the hypertrophy of the mucosa which stops short at the os internum. On the posterior wall about a quarter of an inch below the fundus is a round, somewhat flattened elevation of the mucosa 7 mm. in diameter. The mucosa increases to double its thickness as it comes near the ovum and diminishes by one-half beneath it; the mucosa, which is 4 mm. thick at the fundus, increases to 8 mm at the ovum, measures 4 mm. underneath it, and rises again to 8 mm. at the other side of the ovum, and falls again to the 4 mm. lower down the wall. That is to say, immediately round the ovum it is twice as thick as underneath or beyond it, giving the appearance compared to a stone set in a ring. Microscopic section shows the compact and spongy layers of the mucosa, the former with the drawn out necks of the glands, the latter with the convoluted bases. The section indicates how rapid is the growth of the mucosa when it can become hypertrophied to this extent within ten days of a menstrual period. The ovum rests within the reflexa on a fold of mucosa like a ship resting on a ledge of rock. There is no epithelium on the ledge, though there is on its lower slope. Dilated gland spaces with cylindrical epithelium are seen in this fold and into the mouths of one of these glands a villus has extended. The villi are usually applied to the surface of the mucosa and united to it by a layer of fibrin. Large numbers of decidual cells are noted between the villi; the ends of the villi stimulate the decidua to proliferate. The capillaries are dilated and burst, opening with their mouths into the spaces between the villi; and at this period, according to Leopold the villi are already washed with maternal blood up to the chorion. Another preparation is of a fourteen days' ovum embedded in the mucosa. In discussing the preparations, Dr. Barbour stated that there is no ground for the idea that the ovum becomes embedded in the raw surfaces as has been suggested. The ovum is found perched on a fold of mucous membrane with its surface epithelium still present on one side of it.

The rapidity with which the mucosa is hypertrophied is noteworthy. In this connexion he instanced Werth's investigation where a uterus was removed five days after curetting, when he found the mucosa reproduced anew with glands opening freely on the surface and an unbroken covering of epithelium. It is remarkable that in so early a pregnancy the mucosa shows distinct, compact, and spongy layers. Hunter's and Sir William Turner's views were also criticised. Another question is, How does the ovum get its food? The gist of Leopold's conclusion is that at the early stage a condition is found similar to that described in the fully formed placenta at the fourth month. But Leopold's description is lucid but not convincing. The difficulty is not as to the blood finding its way out of the vessels into this space in which the villi lie, but how it finds its way back again. The channel must be built before the water flows along it or the result is a marsh not a stream. It would seem that the maternal circulation of the placenta must commence in the gradual dilatation of the capillaries without rupture.—Professor SIMPSON remarked that there was now an earlier conception than Leopold's described by Peters of Vienna.—Dr. BERRY HART also discussed the paper.

Reviews and Notices of Books.

Neue Untersuchungen zur Pocken- und Impf-Frage. Von Dr. Med. H. BÖING. (*Some New Investigations of the Small-pox and Vaccination Question.* By Dr. H. BÖING.) Berlin: S. Krager. Glasgow: F. Bauermeister. 1898. Price 5*s*.

To those who are not already satiated by the mass of evidence, statistical and other which has accumulated around the subject of vaccination the perusal of this *brochure* may afford some enlightenment. It is not the first time that its author has written on the subject, and the position he assumes is that of the independent critic. He is apparently opposed to compulsion in vaccination as generally understood but not to stringent compulsory measures (including vaccination) of isolation, disinfection, &c., in times of small-pox outbreak, and he deprecates the decision of the German Government not to appoint a new Commission, composed of the two parties on the question, to reconsider the position. His studies of past records have led him to the conclusion that the share taken by vaccination in the decline in small-pox mortality during the present century has been over-estimated and he enters in some detail into the legislative aspect of the question. Not that he denies the efficacy of vaccination—indeed, he is struck by the altered age-incidence of cases of small-pox and of small-pox deaths, which is one of the most instructive lessons of the century—but he considers the period of its protective power to be very variable, often very brief. Although his pages teem with statistics he cites with approval the statement of a high authority as to the infinitely greater value to be set on the characters of the disease as exhibited in individuals in proof of the power exerted by vaccination in small-pox. Dr. Böing believes that the decline in small-pox which took place rather suddenly at the commencement of the century was owing to more than one factor, as, for instance, a wider recognition of the fact that small-pox is a preventable malady, the consequent greater attention paid to measures directed against contagion, the abandonment of inoculation, and the introduction of vaccination. He doubts if vaccination had not been discovered whether it would have been possible to have maintained such rigid and constant sanitary surveillance as would have sufficed to have stamped out small-pox, even if compulsory measures were adopted, much less so if the attempt had been made, as Juncker suggested, to enforce such measures by reason rather than by compulsion. However, Jenner's discovery came at the nick of time to confirm opinion as to the preventability of small-pox, to replace the baneful system of inoculation and to offer protection to the people against infection for a shorter or longer period. "On these grounds," says Dr. Böing, "was Jenner's discovery a great gain to humanity and science, for even those who do not rate its value in the suppression of small-pox so highly as its one-sided worshippers, but who recognise its drawbacks and deplore them, since it places in jeopardy the most precious right of the citizen and is a source of qualms of conscience to many—even such persons, who are convinced that at the present day small-pox may be combated by other means, vaccination being regarded merely as a powerful supplementary measure—even these, if they have only superficially glanced at the history of small-pox outbreaks and vaccination, will not hesitate to admit that the laurel with which many grateful nations have crowned the head of the English village doctor was well deserved and is still held to have been so to-day" (p. 1.6). We may take it that this long sentence fairly represents the author's own position. He pleads for individual liberty when the plague is not at the door, but on the approach of the enemy he becomes the sternest of autocrats. Yet if people cannot themselves perceive the benefits of vaccination and prefer the liberty to expose their children to the risks of this contagious disease in its unmodified forms, it is hardly likely that even when it has come to them or their neighbours they will be wise in time to prevent its ravages. The worst of the whole opposition is the denial that vaccination has any efficacy as an argument against its importance. Dr. Böing is, however, no anti-vaccinationist in this sense; he is too well versed in the history of small-pox and in the characters it exhibits to doubt its influence, but he doubts if compulsory measures are justifiable except when small-pox has broken out and individuals are in danger of infection.

Human Anatomy, General and Descriptive, for the Use of Students. By JOHN CLELAND, M.D. Edin., F.R.S., Professor of Anatomy in the University of Glasgow, and JOHN YULE MACKAY, M.D., C.M. Glasg., Professor of Anatomy in University College, Dundee. With 630 Illustrations. Glasgow: James MacLehose and Sons. Pp. 833. 1896. Price 28*s*.

THERE is an obvious convenience in having in one volume descriptions of both the macroscopic and the microscopic appearances of the structures constituting the body; and though the student will investigate the anatomy and the histology separately yet it is useful to him to be able to refer readily from one to the other. The account of the Histology of the Elementary Tissues is very satisfactory and it is followed by a somewhat brief chapter on Embryology. The anatomy is described systematically and not with regard to regions. The descriptions are good and not unnecessarily full and are certainly all that can be required by the average student. The illustrations are very numerous, 630 in all; on the whole they are very good and a large number of them, illustrating the vessels and nerves, are coloured. Many of the figures have been taken from the well-known works of Testut and Gegenbaur, but 257 are original. Most of these are excellent but we must take exception to some. There is a great tendency at the present time to utilise photography to illustrate works on anatomy and if used in moderation the method is valuable. In the case of bones and many parts of the brain photography gives very good results, but most attempts to reproduce by any photographic method such structures as ligaments, blood-vessels, and nerves lead to failure; for instance, Figures 157, 159, and 182 are certainly useless. Clear diagrams would have been of much more value to the student.

An appendix on the utilisation of the Roentgen Rays in Anatomy is of interest; in it is pointed out the help that may be gained by the aid of these rays in investigating

the relative position of the bones in various movements of the joints. By the x rays, for instance, a much greater interval than was thought is seen to intervene between the head of the ulna and the pyramidal bone. The book is well written and we can recommend it as a useful text-book for all the ordinary examinations in anatomy.

A Manual of Obstetric Practice for Students and Practitioners. By Professor A. DUHRSSEN, M.D., late First Assistant in the Obstetric Clinic of the Charité Hospital in Berlin. Translated and Edited from the Sixth Emended and Enlarged Edition, by JOHN W. TAYLOR, F.R.C.S. Eng., Surgeon to the Women's Hospital, Birmingham, &c., and FREDERICK EDGE, M.D. Lond., F.R.C.S. Eng., Surgeon to the Women's Hospital, Wolverhampton. With Illustrations. London: H. K. Lewis. 1897. Price 6*s*.

FROM the translators' preface it appears that this manual is a very popular one in Germany and has already passed through six editions. The translators believe that it will be acceptable to English students and "will tend to improve that standard of sound reason and aseptic practice which is still but imperfectly maintained in the ordinary routine of midwifery work." They insist that it is essentially a practical book, that nothing of fundamental importance is omitted, and that at the same time it contains no irrelevant matter. The conciseness with which the important divisions of the subject have been treated will be evident when we say that to extra-uterine pregnancy is allotted rather less than four pages. Although it is stated that extra-uterine pregnancy may be either tubal, ovarian, or abdominal, yet a little further on the author says, "No fully proved instance of primary abdominal pregnancy is so far known." On the important matter of antiseptics the advice given is generally reliable and the measures for securing asepsis are not essentially different from those usually employed in this country. As regards the management of the third stage of labour the placenta, we are told, is always delivered by Credé's method in Germany. It is here recommended that Credé's manipulation should only be employed from half an hour to one hour after the birth of the child during a pain and with the bladder empty. In connexion with this part of the subject precise directions are given as regards the course to be adopted when membranes are retained after the placenta has been expelled. The author says that retained membranes only require removal when they lie in the vagina unless decomposition or hæmorrhage occurs. If they lie in the uterus they are spontaneously expelled covered with blood-clot in a few days. Curiously we notice no mention in the index of symphysiotomy, of accidental hæmorrhage, or even of post-partum hæmorrhage or of the ring of Bandl. In the description of the treatment of retroflexion of the gravid uterus after incarceration we do not see any mention of the expectant method of treatment—that is, treatment by rest in bed and keeping the bladder empty by means of a catheter. As is well known, in many cases so treated the uterus rights itself spontaneously in a few days. With regard to the results obtained in the best managed lying-in hospitals and the results in private practice the author alleges that "the introduction of antisepsis into general midwifery practice has not lowered the mortality after obstetric operations ..... although this has been reduced to a minimum in hospital practice. This disparity is explained by two causes—namely, defective antisepsis and defective technical skill in general practice. ..... An improvement may be expected in the future because strict antisepsis or asepsis (I do not mean a pretence at either) will be the Commonwealth of all Obstetricians."

The book is convenient in size and we have no doubt will be found useful by those for whom it is intended. In some respects in places we are reminded of its foreign origin, while occasionally the translators have been less careful about the Latin than we may suppose them to have been in dealing with the German of the original, or they would not have passed "per vaginum" on page 53.

Studies in Psychical Research. By FRANK PODMORE, M.A. London: Kegan Paul, Trench, Trübner, and Co. 1897.

THE attitude of various sections of the scientific world towards the supernormal has somewhat changed during the past fifteen years since the founding of the Society for Psychical Research. Early in 1882 under the presidency of Professor Henry Sidgwick, of Cambridge, a group of men trained in philosophy and in the methods of science combined to investigate the evidences of "debateable" phenomena designated by such terms as mesmeric, psychical, and spiritualistic. The testimony of many apparently competent witnesses including scientific men of eminence in various countries such as Russel Wallace and Crookes, seemed to indicate that amid much manifest delusion and deception there was a residuum inexplicable by the generally recognised hypotheses. Mr. Podmore has been a prominent member of this society from the beginning and in this volume of studies an attempt is made to estimate the value of the work done by the society and recorded in its dozen volumes of proceedings. It is an individual expression of opinion as the author does not wish to implicate any of his colleagues in his conclusions. He is possessed of a keen critical mind and may be taken as an example of the modern spirit spoken of by Huxley "which works and will work without haste and without rest, gathering harvest after harvest of truth into its barns and devouring error with unquenchable fire." Many of the investigations have resulted in the detection of imposture and the discovery of unsuspected fallacies of sense and memory as well as in demonstrating the possibility of the unconscious communication of information by indications "too subtle to be appreciated by the normal self but readily seized upon and interpreted by the automatic or somnambulic consciousness." The author is much impressed with the investigations made in 1872 by the President-elect of the British Association, Sir William Crookes, F.R.S., and considers that his experiments constitute the most important body of evidence for the operation of an unrecognised force and the occurrence of physical phenomena which seem unexplained by any known cause. With regard to telepathy he holds that there are grounds sufficient to justify it as a working hypothesis, but the proof of its "transcendental nature" is still wanting. There are many subjects dealt with of supreme interest to psychological students, such as the automatic action of brain centres below the level of consciousness—in "the subliminal consciousness" of Myers—manifesting a wider range of activity than in the "supraliminal" or ordinary consciousness. The phenomena of trance, especially in the person of a Mrs. Piper, of Boston, have for several years occupied the attention of some of the most distinguished members of the Society, including Professor W. James of Harvard, Dr. R. Hodgson, Mr. F. W. H. Myers, Professor Oliver Lodge, and others. "The full evidence of this series of trance-communications has not yet, as I write these words," remarks Mr. Podmore, "been completed, and until this has been done it would be premature to deliver a verdict. But this much seems clear, that the trances of Mrs. Piper furnish the most important evidence which the Society for Psychical Research has yet adduced for the existence of something beyond telepathy and afford a sufficient justification, if any were needed, for the labours of the past fifteen years." Taken as a whole this book is of interest to students of psychology as showing what has been and is being done in the field of psychical research.

Hugh Wynne, Free Quaker. By S. WEIR MITCHELL, M.D. London: T. Fisher Unwin. Price 6s.

DR. WEIR MITCHELL has been hitherto only known, upon this side of the Atlantic at any rate, as a very able physician and as the author of various medical works. In "Hugh Wynne" however he comes forward as a writer of fiction of real merit. Books written in the style and manner of a bygone period have been often attempted, but the success of the experiment has in most instances been very doubtful. Two conspicuous exceptions will occur to everyone. Meinhold the humble Lutheran pastor deceived the first critics of his day with "Sidonia" and "The Amber Witch," while Thackeray, though of course not writing with any intent to make it appear that he really was an eighteenth century writer, produced that masterpiece of eighteenth century English, "Esmond." And for Dr. Weir Mitchell we can say that he has in places come within measurable distance of the charm of Esmond. The scene of "Hugh Wynne" is laid during and just before the Revolutionary War of the American Colonies, a stirring time at which every Englishman must confess the mother country did not shine. "Hugh Wynne" was born in the old Quaker city of Philadelphia, his father being one of the strictest of that sect who had married his very opposite in the person of one Marie Beauvais, who is thus described: "This sweet and most tender-hearted lady wore, as you may like to know, a grey gown and a blue chintz apron fastened over the shoulders with white bands. She had a great quantity of brown hair ..... it was all very silken and so curly that it was ever in rebellion against the custom of Friends which would have had it flat on the temples ..... In middle life she was still pliant and well-rounded with a certain complement of fresh prettiness in whatever gesture she addressed towards friend or guest. Some said it was a French way, and indeed she made more use of her hands in speech than was common among people of British race." Here is how she welcomed her son home from school at the end of his first day. "'I could scarce wait for thee! I wish I could have gone with thee Hugh; and was it dreadful? Come, let us see thy little book. And did they praise thy reading? Didst thou tell them I taught thee? There are girls I hear,' and so on—a way she had of asking many questions without waiting for a reply." From such opposite natures was "Hugh Wynne" descended, so that, each supplying what the other lacked, it is small wonder that he grew up a gallant gentleman and soldier. We have not space nor would it be fair to recount all his adventures, but we counsel everyone to read the book. The pictures of Washington, of the noble but unhappy André, and of Darthea Peniston, whom Hugh married after many weary trials, are all drawn with a sure hand and can be read over and over again.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) HAZELINE SNOW; AND (2) TABLOIDS OF CHEMICAL FOOD.
(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, E.C.)

IN the first preparation an important improvement has been made, since on its application to the skin it leaves no trace of greasiness, as is the case with preparations containing fats, oils, or glycerine. It is of a beautifully white colour and pleasantly scented. It is said to contain 50 per cent. of hazeline. As is well known, the extract of hamamelis bark affords an excellent application to the skin, as in chapped or abrased conditions, especially when applied in the bland form of the ointment just described. Hazeline possesses astringent, anodyne, and hæmostatic properties and is on that account also useful in hæmorrhoids. For this purpose a mouthpiece is provided which may easily be screwed upon the collapsible tube containing the hazeline snow. The tabloid of chemical food is an excellent introduction. Each tabloid of 5 grains contains the combined phosphates of iron, calcium, potassium, and sodium, in such proportions as to be equivalent to a fluid drachm of the compound syrup of phosphates of iron. In the tabloid form this excellent formula may be administered with obvious advantage and convenience.

MELEGAR (HONEY VINEGAR).
(MELEGAR WORKS, DARENTH, DARTFORD, KENT.)

The production of vinegar from honey is a decidedly novel step which according to our examination of a specimen submitted to us has been carried out with distinct success. The peculiar and attractive fragrance of the vinegar so made is doubtless in part due to the aromatics derived from the honey itself, their character being favourably modified by the fermentative process. Our analysis of the vinegar resulted as follows: acetic acid, 5·5 per cent.; alcohol, 1·06 per cent.; total solids, 2·0 per cent.; mineral matter, 0·09 per cent., phosphates, traces. The vinegar is admirably adapted for all culinary purposes, is of excellent strength, and possesses a pleasant fragrance and mild taste.

HUMANISED MILK (SAP BRAND).
(THE MILK PREPARATIONS CO., BRENTWOOD, ESSEX.)

The analysis of this milk was as follows: total solid matter, 11·33 per cent.; fat, 2·97 per cent.; ash mineral matter, 0·60 per cent. The specific gravity at 60° F. was 1030. The milk was perfectly sweet and sound while its flavour was satisfactory. The specimen was evidently carefully sterilised, this all important process having been carried out with a minimum effect upon the taste of the milk. As will be seen from the above analysis the composition of the milk is well in accordance with the standard requirements of infant feeding. We could obtain no evidence of preservatives having been added. A closed sample exposed to a temperature of 100° F. for several days developed no undesirable changes whether in regard to smell, taste, or appearance.

EUGOL.
(BAYARD, SONS AND BAYARD, NEW YORK, AND 26, BRIDLE-LANE, GOLDEN-SQUARE, W.)

This is a practically colourless fluid with an agreeable aromatic smell like that of thymol. On distillation it yields alcohol while remaining behind is a fluid of the viscosity of glycerine. This residue contains boric acid and a peculiar gummy substance possessing a burning taste. The fluid is acid in reaction. It affords a very agreeable and powerful antiseptic and, moreover, is said to be non-poisonous.

SCOTCH WHISKY (THE FALL OF FOYERS BRAND).
(WILSON AND CO., 118, LEITH-STREET, EDINBURGH.)

The following analyses afford a means of comparing the chemical composition of various specimens of whisky which differ in respect to age. Whisky five years old: alcohol, by weight 41·80 per cent., by volume 49·29 per cent., equal to proof spirit 86·37 per cent.; acidity reckoned as acetic acid, 0·03 per cent.; extractives, 0·14 per cent.; mineral matter, *nil*. Whisky seven years old: alcohol, by weight 42·29 per cent., by volume 49·81 per cent.; proof spirit, 87·29 per cent.; acidity reckoned as acetic acid, 0·03 per cent.; extractives, 0·15 per cent.; mineral matter, *nil*. Whisky ten years old: alcohol, by weight 40·80 per cent., by volume 48·21 per cent., equal to proof spirit, 84·49 per cent.; acidity reckoned as acetic acid, 0·04 per cent.; extractives, 0·23 per cent.; mineral matter, *nil*. Whisky twelve years old: alcohol, by weight 39·30 per cent., by volume 46·59 per cent., equal to proof spirit, 81·64 per cent.; acidity reckoned as acetic acid, 0·05 per cent.; extractives 0·30 per cent.;

mineral matter, *nil*. In general these results are satisfactory, the amount of extractives in all being quite low as well as the degree of acidity, while the alcoholic strength is well up to the standard. It is interesting to observe how both the amounts of extractives and acidity increase with the age of the spirit while the alcohol correspondingly diminishes. The matureness of taste was quite in accordance with the statement as to the time the whisky had been stored.

DISINFECTANT NIGHT-LIGHTS.

(PALMER AND CO., LIMITED, VICTORIA OIL AND CANDLE WORKS, STRATFORD, E.)

In design these lights are precisely the same as ordinary night-lights and are to be employed in the same way. Incorporated with the wax is a compound phenol which on being drawn up into the wick gives up on ignition part of the carbolic acid in a free state. This is evident from the smell of carbolic acid which pervades the room in which the candle has been burnt for an hour or so. Part, however, of the carbolic acid must be lost since it is inflammable. The candles are suggested as likely to be of service in pulmonary affections. Night lights may also be obtained from which other disinfectants may be distributed in the air of the room by the same means.

A FEVER SEASON IN AN INDIAN GAOL.

BY SURGEON-CAPTAIN W. J. BUCHANAN, B.A., M.B. DUB., &C., DIPL. STATE MED., SUPERINTENDENT CENTRAL GAOL, BHAGALPUR.

IN the following article an endeavour is made to bring home to the minds of readers in Europe scenes which are very familiar to medical men serving in India. It matters little where the scene is located, whether in a regimental hospital, a civil dispensary, in the coolie lines of an Assam tea-garden, or in a large central gaol. The latter is chosen because the writer is most familiar with it.

In India it is customary to divide the years into those which are "healthy" and those which are "unhealthy." The causes which differentiate the one from the other may be summed up in one word—malaria. Other diseases such as cholera, enteric fever, and lately plague appear to loom large on the medical horizon in India, but none of them are so regularly destructive as are the effects of malaria. It is difficult for those at home to appreciate the difference between what is in India known as a "healthy" and an "unhealthy" year. It can best be understood by the difference between a year in England when influenza is raging and an ordinary average year. It is no exaggeration to say that an exactly similar difference is felt in India in an "unhealthy" year. To quote specific examples. Take the four years 1894 to 1897 inclusive. Of these the years 1895 and 1896 were pre-eminently healthy years. The year 1894 was raised to the "bad eminence" of being the most unhealthy year on record and the unhappy year 1897 bids fair to equal it.

Before going further it is well to state that the following description applies chiefly to the Province of Lower Bengal. Speaking generally in a "healthy" year we have a scanty rainfall. The monsoon which begins in June is perhaps late, not setting fairly in till the end of that month; there are usually longish intervals of sunshine or "breaks in the rains" and the rainy season ends in September with a falling off of 15 to 20 inches from the average monsoon rainfall. The heat therefore is prolonged and very trying, but it is accompanied with but little sickness. Such a "bad rains" is usually followed by an increase of cholera in the following dry season. The water in the village tanks is scanty and easily polluted accidentally, as for example, by the washing in it of the excreta-stained clothing of some cholera-stricken wayfarer. This often suffices to start an epidemic which may spread through several districts. The scanty rains also result in either actual famine or scarcity with high prices, but the effects of this scarcity on the health of the people will not be marked for several months to come. On the other hand the history of an "unhealthy" year is very different. After a fierce, hot, dry season a violent setting in of the rains early in June brings much needed relief to all. The heat had become well-nigh unendurable. Fiery hot days with a shade temperature of from 103° to 109° F. are succeeded by no less dreadful nights. Not a breath is stirring, "there is a silence in the dumb dead air." On such nights we expect cases of heat-stroke or "heat apoplexy" as it is popularly called in India. On one such night I remember two cases of heat-stroke among prisoners in a half-empty ward and the same night the gaoler trying to sleep on the roof of his house in the open air succumbed to the same cause. After such heat the first burst of the rains is a welcome change. The rain will last perhaps for ten or twelve days followed by an interval or "break." Before it has got too hot again down comes more rain. Thus pass June, July, and August, each month leaving its record of from eight to ten inches of rain. September is the most dreaded month in Northern India. In "unhealthy" years the rain continues, the air is fully saturated with moisture, the slightest exertion brings out perspiration, and chills are consequently very easily taken, and with malaria present a chill spells fever. The monsoon rains end either by lysis gradually or by crisis with a violent cyclone. Immediately begins the dreaded process of the "drying up of the rains."

To return now to our hospital. Taking the season of scanty rain first, the beginning of June finds the hospital almost empty, a few cases of febricula from sun exposure or fatigue, plenty of ulcers, abscesses, and boils, and a few more perhaps of sudden attacks of watery diarrhœa due often to eating raw grain or unripe fruit. For the first few weeks of the rains little change is to be noted only that an odd case of ague or intermittent fever comes in, especially in those who have suffered frequently from ague before. As July and August advance more such cases are met with and frequently a few cases of mild dysentery or diarrhœa. In September affairs are at their worst, but still the numbers in hospital for all causes (I refer to central gaols with over 1000 convicts) do not amount to more than 25 or 30 with about the same number of feeble men in the specially dieted gangs. By the end of October the "fever season" is at an end, the "cold weather" has set in, and except for pneumonia and a few chronic cases there are left no serious cases in hospital.

The picture is very different in a rainy "unhealthy" season. Up to the onset of the rains all has gone well. As the rainy season advances more and more cases of ague are admitted. Patients complain of having had fever at night, of ill-defined malaise, and disinclination for food; the gaoler reports that all the food is not being eaten as usual by the prisoners and reports to the superintendent of "short work" are more frequent. Such cases are at once sent to hospital and given a smart purge on admission. Calomel I prefer in stout, sturdy individuals and castor oil in ounce doses in the less robust. The fever is ushered in with languor and chilliness,[1] headache, constipation, and more or less severe pains in the back, joints, and bones. The eyes are suffused and heavy. There is an intolerance of bright lights. The skin is dry and burning hot. The urine is high-coloured. This condition lasts for several hours and under treatment or even without it the fever subsides and next morning the patient feels much better, his bowels having been freely moved. Quinine is given in accordance with individual views. I prefer to give a purge first and when profuse perspiration has set in or as soon as the patient is seen the next morning to give 15 gr. of quinine. Two such doses (= 30 gr.) before 9 A.M. is my usual rule, to be continued so that the patient shall receive up to 60 gr. before the next paroxysm is due. Small doses of quinine are as useless in ague as small few-grain doses of ipecacuanha are in acute dysentery. Phenacetin is the best of all the antipyretic drugs in my experience. It acts rapidly when the temperature is high, bringing out copious perspiration and giving much relief. It however loses its effect if too frequently used on the same individual. I have never seen a single bad effect from phenacetin after using it a thousand times. If, however, I was in circumstances where only one drug was available for treating malarial fevers I would choose a purgative. Without the preliminary purge I have seldom seen quinine do any good. These attacks often cease after one day's fever, but many recur on the third day (tertians), though fevers of text-book regularity are of much less

[1] Rigors of as severe a type as is commonly seen in England when Anglo-Indians on return home are attacked with their old ague are rarely seen in natives.

frequent occurrence than cases of an irregular or mixed type lasting two, three, or five days with but little remission.

As the season progresses more troublesome cases become frequent; in addition to numerous ague cases others appear to which the convenient name of "remittent fever" is given for want of a better title. Whatever may be the true pathology of the types to be presently described the appearance of "remittent fever" in the records is an expression of the severity of the fever which is prevailing. Such cases are certainly not enteric fever. This disease is so rare in gaols as to be a curiosity and every case which dies in gaol has its post-mortem examination. I have come to roughly distinguish two types of bad cases during an unhealthy season. One set have fever of an irregular type: the range is not high but may be continued, remittent, or even intermittent. This lasts for ten days or a fortnight, followed by an apyrexial interval of about equal duration, to be succeeded by another fever attack for a week or longer. Three or four such attacks or relapses are not uncommon. I have the charts of cases lasting for 90 and even 120 odd days. I have never been able to find any form of malarial organisms in such cases. The only cases which I can remember resembling these are the cases of Malta and Rock fever which I saw in Netley Hospital. Their characteristic is that they are almost symptomless: except that the thermometer records a raised temperature there is scarcely another positive symptom or sign. Even the patient's weight does not fall rapidly and the appetite remains for weeks excellent. The lungs and liver are normal. The spleen may or may not be enlarged. The urine is healthy. Quinine or any other drug known to me has absolutely no specific effect. In the course of a month or six weeks the patient begins to mend. This very negative kind of fever is, I believe, well known but has not been described.

The other type of cases met with at the end of an unhealthy season is very different. I call them cachectic cases. The patient has probably before suffered both inside and outside gaol from both ague and dysentery. During the previous few months he has had two or three mild attacks of fever (ague), and now he gets an attack which he cannot shake off. It begins either as low fever or low fever follows after a week of higher temperature. At any rate, the patient becomes weaker, loses weight, becomes anæmic, and his conjunctivæ are either pale blue-white or of a yellow, jaundice-like colour. The lips are pale. The tongue is either large, flabby, and indented, with black, pigmented spots[2] or red and raw in patches and at the edges. The latter usually is the case later in the course of the illness. The gums are either blue-black in colour or red, swollen, or ulcerated, and, as first pointed out by Brigade-Surgeon-Lieutenant-Colonel Alexander Crombie, of Calcutta, an ulcerated patch is often found between the upper and lower last molar teeth on one or both sides. The feet and ankles are often œdematous, ascites often supervenes, and the spleen is enlarged. Nyctalopia is frequently complained of. As the patient becomes weaker a form of mucous diarrhœa or dysentery comes on or a low gangrenous condition of the great intestine as often found in cases of so-called "chronic dysentery." This is a common cause of death in these cases. Where this intestinal condition does not supervene the patient may linger on for weeks and months prostrate and emaciated till either pneumonia or a sudden œdema of the lungs puts an end to his long illness. All cases are not however hopeless. As to the merits of tapping in ascites in such cases opinions are divided. These cachectic cases are very common in our civil hospitals and paracentesis is very frequently performed. Many medical officers are from experience opposed to it; nevertheless, when a patient receives the care and attention usual in a gaol hospital I have tapped (even at death's door) many cases which have completely recovered aided by good food and plenty of milk from our well-managed gaol dairies.

Mention has been made above of the condition of the mouth and gums in cachectic cases. This condition used to be and is still sometimes called scurvy, but to this view my experience is utterly opposed, and judging by reports of other medical officers I believe that the opinion of most is opposed to the scorbutic theory. The question is too long to go into here, but the following are among the reasons for attributing this well-known condition to malaria rather than to scurvy: 1. It is almost invariably found at the end of a feverish (malarious) season. 2 Fresh vegetables are plentiful at this time and at the time (in the dry, hot weather) when good anti-scorbutic vegetables are most difficult to obtain this condition is seldom, if ever, seen. 3 In "healthy" (non-malarious) years this condition is absolutely unknown—e.g., in 1895 and 1896—whereas in a malarious year like 1894 it was very common. 4 All the other symptoms of scurvy (extravasations, &c.) are absent. 5. Lime-juice has been tried over and over again and has failed to remove this condition. I have had lime-juice administered before my own eyes on parade to gangs of men for weeks at a time and have found it absolutely fail to improve their condition. 6 On the other hand, where quinine, arsenic, and iron are freely administered this condition is either absent or soon got rid of. 7. Again, so deeply has the scorbutic theory influenced practice that the greatest care is taken to provide good anti-scorbutic vegetables in our gaol gardens and animal food is freely issued when required, yet in a malarious year we see plenty of spongy and ulcerated gums; in a healthy year it is as conspicuously absent, *the conditions as regards food being absolutely the same.* It is not meant that cases of land scurvy are altogether unknown in our gaols but that the common condition above described is not scurvy. Real scurvy I have seen in Upper Burma among sepoys fed for long periods upon monotonous commissariat rations and among European officers who trusted solely for supplies to that department, but in such cases I have found lime-juice to act like magic. P. Moreover an identical condition of the gums, to a somewhat less extent, is far from uncommon in malarious seasons among European officials in India who have suffered from fever in whose cases the question of unsuitable diet could not arise.

Now for a word in conclusion as to the means taken to prevent or limit the effects of malaria on prisoners. In addition to good food, good water, warm clothing and suitable barrack accommodation the gaol codes give the prison medical officer ample discretion in the matter of extra and varied diets. That the food of prisoners is for 999 men out of every 1000 superior in every respect—quality, quantity, variety, and cooking—to that to which they are accustomed outside is the frequently recorded opinion of the visitors, official and non-official, the latter being usually native gentlemen well acquainted with the conditions of life among their poorer countrymen. In addition a gigantic experiment has been in progress for the past three years in the prisons of Bengal and the Punjab in the prophylactic issue of cinchonidine. This preparation of cinchona has been issued daily during five months of the rainy season to every single prisoner in Bengal and Punjab for the past three years to sick and to healthy alike in doses of from five to ten grains with or without iron (ferri sulphas). Opinion is still divided as to its value; its issue during 1895-96 coincided with two very healthy years. The present year, 1897, is unhealthy and will be a test year. The results of such an experiment on a daily average strength of 17,000 Bengal and 12,000 Punjab prisoners cannot fail to be of great interest to the profession and will go far to settle the important and vexed question of the value of the prophylactic issue of cinchona.

It has now been shown how great is the difference between a healthy and an unhealthy year in India. It cannot be said that gaol management is responsible for the bad effects of a bad year. Under the same officers, with the same food, water, clothing, housing, &c., one year will be bad and another year good. Individual attention to details on the part of the superintendent, medical officer, and prison officers generally can certainly do much, but so long as malaria remains so far beyond our control so long will much sickness remain in malarious years.[3] The theory that malaria is chiefly or sometimes a water-borne disease is not borne out by experience in India. Boiled and filtered water has not prevented malarial fevers. The time may years hence come when Bengal will be as free from malaria as England is to-day; should such a day come we may look forward to see the general death-rate of the people (now 42 per mille) drop by 20 per 1000. Meantime it is satisfactory to know that the average death-rate of Bengal gaols is 15 per mille below that of the province, and in some of our large central prisons the death-rate has been well under 10 per mille, which is about the average of the non-malarious prisons of England.

Baxar, India.

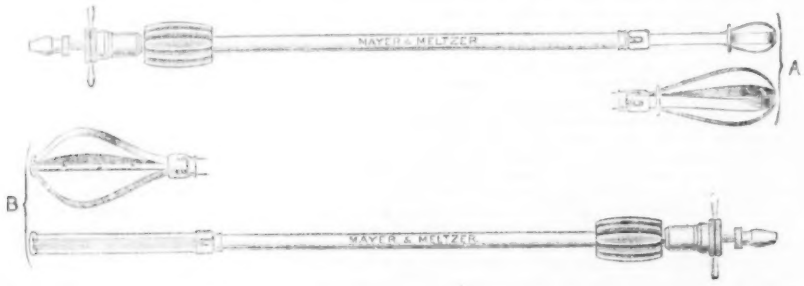
[2] Black pigment patches are very frequently seen on tongues of natives of India of the lower castes or aboriginals. Though often deemed to be malarial they are equally common at healthy seasons. See a note on this subject by Surgeon Captain F. P. Maynard, Indian Medical Gazette, October, 1897.

[3] The terrible after-effects of continued malarial poisoning are well described in Surgeon-Captain L. Rogers's just published report on *Kala-azar* (black fever) in Assam.

New Inventions.

ROTARY IRRIGATING CURETTES.

I HAVE often found in curetting the uterus the difficulty of removing the entire endometrium; likewise in cases of polypus or where portions of an abortion have been left behind with the ordinary curette one is apt to miss small fragments no matter how carefully one operates. With the instruments which I have devised, made for me by Messrs. Mayer and Meltzer, of Melbourne and London, such a thing is impossible. That with the long blades (Fig. B) is for the cervix and body of the organ, while the four-bladed one (Fig. A) is for the fundus. The thumb-screw is for altering the curve of the blades and for accommodating them to the size of the uterus. By turning the instrument to the right a sharp edge is brought to touch the surface to be operated upon and if turned to the left a blunt one. They are made with hollow stems so that a stream of water can be passed through them from a douche for washing out fragments removed by the blades. I have used them several times with the utmost satisfaction, in one case the endometrium coming away completely inside the blades of the instrument.



W. H. OVENDEN, L.R.C.S. Irel.
Christchurch, New Zealand.

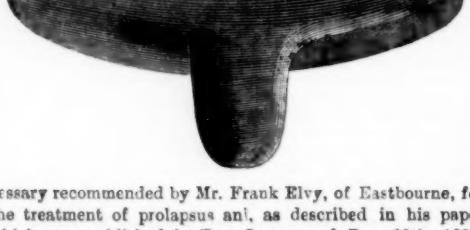
A MODIFIED WRENCH.

THE accompanying drawing illustrates a modification of Mr. H. O. Thomas's wrench which has been made for me by Messrs. Down Bros. The upper arm is curved so as to fit more completely the convexity of the dorsum of the foot than the straight arm of the ordinary wrench can do and so avoid slipping and abrasions of the skin. The arms on section are elliptical and not round, thus distributing pressure more equally at the spot where such is made. The wrench is made to open by means of a screw to the extent of five inches and closes up almost completely so that it can be used for both infantile and adult feet.

A. H. TUBBY, M.S., M.B. Lond., F.R.C.S. Eng.
Weymouth-street, Portland-place, W.

PESSARY FOR TREATMENT OF ACUTE PROLAPSUS ANI.

THE accompanying illustration represents the form of pessary recommended by Mr. Frank Elvy, of Eastbourne, for the treatment of prolapsus ani, as described in his paper which was published in THE LANCET of Dec. 11th, 1897, p. 1529. Mr. Elvy found that the pessary not only prevents descent of the bowel, but by its pressure it empties the engorged veins and favours absorption of the œdema; it should be inserted at night and retained until the following morning, being supported by cotton wool and a firmly applied T bandage. As already mentioned in Mr. Elvy's paper, the pessary is made by Messrs. Ferguson and Co. (Mr. R. Beauchamp), 40 and 41, West Smithfield, E.C.



ROYAL INSTITUTION OF GREAT BRITAIN.—The arrangements for the Friday evening meetings before Easter include lectures by Sir John Lubbock on Buds and Stipules on Jan. 21st; by Professor C. Lloyd Morgan, F.G.S., on Instinct and Intelligence in Animals on Jan. 28th; by Mr. Alan A. Campbell Swinton, M.R.I., on some New Studies in Cathode and Rœntgen Radiations on Feb. 4th; by Professor Thorpe, LL.D., D.Sc., F.R.S., on Some Recent Results of Physico-Chemical Inquiry on March 4th; and by Mr. James Mansergh, F.G.S. &c., on the Bringing of Water to Birmingham from the Welsh Mountains on March 28th. Professor Dewar will lecture on April 1st. The Christmas lectures embrace the following subjects: Principles of the Electric Telegraph (now being delivered), on the Simplest Living Things, the Halogen Group of Elements, Some Italian Pictures at the National Gallery, and Recent Researches in Magnetism and Dia-magnetism. The Saturday lectures will deal with Cyprus, the Structure of Instrumental Music, and Portraits as Historical Documents.

THE LANCET.

LONDON: SATURDAY, JANUARY 1, 1898.

IT has been our not infrequent custom when standing upon the threshold of a new year to pass in review the leading facts which affect the position of THE LANCET in its relations to the medical profession. It is our aim to make THE LANCET the organ of professional opinion in its largest sense and a just reflection of sound professional sentiment, and we incur more than one liability towards our readers in our attempt to carry out the design. Not only do we propose to furnish our readers with information upon all matters of medical interest, but we also desire to register their own feelings upon various questions of importance, while we accept the grave responsibility of suggesting the courses that it would be wisest and best for them to take in many situations of difficulty and embarrassment, whether the dilemmas present themselves in public or private life. Such relations are of a character to demand from us an occasional account of our stewardship and the opening of a new year, when the gaze is alternately directed backwards on the past and forwards on the future, is clearly a fitting time for a few words with this intent. It is not egoism that impels us to write about ourselves but a deeply-rooted feeling that the close communication between our readers and ourselves, the existence of which is at once our greatest pride and pleasure, makes now and again a summary of work done a necessity.

The year that has just passed has witnessed no sensational development of scientific knowledge. Such advance as has occurred has been less evident than usual as it has taken place rather in experimental and literary directions than in the applications of theories and of laboratory work to the actual practice of healing. As we had occasion to remark last week in our summary of the year's medical work there have been important assemblages at all of which grave scientific questions have been discussed with vigour and detail; and there has also been an exceptional output of medical literature ranging from encyclopædic works, through handbooks and treatises, to small monographs—sometimes on very small points. We have endeavoured to keep our readers in touch with the work of the congresses by reporting at considerable length all the important proceedings which have taken place at them, while we have aimed at sifting for them the overwhelming masses of literature by selecting for particular review those works that contained either new matter or an improved method of saying old things. It must not be supposed that a year, concerning the scientific work of which there is no more to be said than that its progress has been much discussed at polyglot assemblies and much written about in divers tongues (and occasionally at inordinate length), has been an entirely wasted year. On the contrary it has been one of reflection, one in which the leaders of medical thought have given time to the sifting of evidence, to the proving of past words, and to the putting into actual practice some theoretical inferences. Such a period of rest has, to our thinking, been much required in our world. For investigation may be too keen and become feverish; while shrewd guesses, perhaps only partially true, may simulate discoveries that are much desired and that, perchance, may lie at the door of the guesser, but which have not yet been made. With these considerations before us we are disposed to think that the profession may congratulate itself on the scientific work of the year, although it has been marked by no startling development either in therapeutic or preventive medicine—at any rate, by no development which we have considered to call for much serious notice or detailed comment.

In the social medical world as distinct from the scientific medical world great activity has on the other hand to be chronicled, for which reason we have during the year given a larger amount of space than usual to the discussion of the many subjects of vital interest which fall under the head of medical politics. We hope that in the near future practical developments will follow upon the sense now deep-seated in the medical profession that there are crooked matters which could be set straight by resolution, by, perhaps, a little self-sacrifice, and above all by union. The general practitioner has as a whole class fallen, we regret to think, upon ill times. His work has grown no lighter, his responsibilities are no less exacting, but in many directions his remuneration has decreased. He is suffering in part from the overcrowding of the profession, in part from the competition of unqualified persons and lay associations, in part from the faulty administration of certain great medical charities, and in part from the rampant prevalence of quackery which enjoys in this era of our civilisation an immunity that is as perilous as it is astounding. Quacks there have ever been and quacks there will ever be, but never, we believe, in the history of the world have the mendacious statements of the charlatan enjoyed such credit or his worthless wares been bought so cheerfully and so universally at such exorbitant prices as now at the end of the nineteenth century. That these things are so readers of our columns know, and they may consider the large amount of space that we have devoted to the discussion of them a proof that we hold them to be subjects of the greatest urgency to all medical men—not only to those who have suffered but to their more fortunate brethren who have so far escaped, but whose security will not exist for long unless it be safeguarded. That we shall attempt to point out the paths leading to a better condition of things, as we have attempted in the past, goes without saying, but it is equally certain that nothing will be done unless the profession unites to work out its own salvation. We have placed before our readers many examples of hospital abuse. The modern developments of the out-patient department cheat the sick, cheat the honorary medical officer, cheat the general practitioner, and cheat the charitable public alike. This is the view which all medical men should keep prominently before the large public with whom they are in intimate relation. We have told and are still telling the Battle of the Clubs. The Medical Aid Association is in many places and in many of its workings a name for a scheme by

which medical services are undersold to the public, who thereby obtain all the disadvantages which attend purchase in a shoddy market, while the advantages are reaped neither by the medical man whose position is exploited nor by the suffering poor in whose cause the association claims to work. This again is the view which medical men should enforce upon their numerous neighbours. Lastly, there must be some legislative restraint of quackery and if the General Medical Council cannot protect the public and help the profession by suppressing the charlatan the time has come when it should have larger powers.

THERE is not an official report published of greater moment to the people of London than that issued on behalf of the London County Council by its medical officer, Mr. SHIRLEY MURPHY. It must record the position whether it be stationary, in arrear, or in advance, compared with recent returns relative to the administration of public health affairs in the metropolis. Its statistical columns afford proof that the last is generally the case. The last official year (1896) has certainly been a busy one for the County Council's medical staff, who have exhibited admirable zeal in compelling the observance of that excellent measure, the Public Health (London) Act, on the part of those vestries that are within the London County Council's jurisdiction. To begin with, the Council's inspectors are responsible for the control of the London milk-supply, for the prevention of the contamination of milk, and during the year no less than 21,284 inspections of dairies and milk-shops were made. Again, continued activity in watching offensive operations is manifest since 4631 inspections of premises upon which offensive trades were carried on were made and in eleven instances proceedings were instituted. Similarly, trade nuisances have been as far as possible suppressed, pressure having in most instances been brought to bear upon offal disposers, tripe boilers, gut scrapers, *et id genus omne*. Several cases of smoke nuisances arising from factories as well as from large habitable buildings have been dealt with, but we think still greater vigilance should be exercised with regard to offenders of this class so that at least some mitigation of the murky state of the metropolitan atmosphere might be effected.

In regard to the removal of house refuse there appears to be a very fair compliance all round with the requirement of the Council's by-law, that house refuse shall be removed from every house not less frequently than once a week. An exception to the house-to-house system of collecting garbage and house refuse appears to be in the case of Clerkenwell. Although here, as the medical officer of health of that district writes, the old, porous, filth-saturated brick-built ash pit has been largely replaced by non-porous metal bins of small size, yet the fact that these are not emptied frequently is a distinct source of nuisance, and a danger to the public health. As to the final disposal of the collected refuse there is evidently still room for improvement in many of the districts. Dust has not now the value which it had years ago when it was profitable to employ men to sort it and set aside materials worth recovering. Again, the dumping down of huge quantities of house refuse and garbage on the low-lying outskirts of London is objectionable, and not in accordance with public health requirements. Dust is a necessary evil, and as such must be effectually dealt with and demolished. It possesses of course only a slight value as fuel, but the difficulty of burning it without the formation of clinker has been hitherto an obstacle to this method of disposal. At the present time, however, not only has this difficulty been successfully solved but furnaces or destructors are in use in which the heat evolved is utilised for the production of electric power. In these appliances—which afford an excellent instance of science serving in the interests of sanitation—small coal, we believe, is used as an augmentary fuel. The recent installation at Shoreditch will be fresh in the memory of our readers. Here the profitable "converter" replaces the expensive "destructor," a result which is consistent with the time-honoured definition of dirt as being after all only matter in the wrong place. The inspection of bakehouses has been continued, but it seems clear that a biennial visit is insufficient. No department coming under the administration of the Council's officers needs greater vigilance, as the present report would show, than that dealing with the attempted sale of unsound food. A great many seizures have been made during the year and notably in Holborn, but since adequate punishment has been inflicted there have been very few seizures of diseased meat. Tinned foods occur amongst the articles so seized and it has been suggested that in order to prevent the sale of food that has long been contained in the tin it should have stamped upon it the date of tinning. We may justly take some credit to ourselves, we think, for the measures that are now taken for ensuring the better sanitary conditions under which ice-creams are made. It is now concluded, as we urged long ago, that a regular inspection of these premises and ice-cream shops should be made and, as we have suggested, that the ice-vendors should be registered.

The present report also deals with the London water-supply, the centre of interest in this section being perhaps Mr. SHIRLEY MURPHY'S remarks upon Sir EDWARD FRANKLAND'S yearly report. We ourselves had occasion to comment upon this report in relation to the results obtained by the County Council's chemists. In traversing some of the opinions of Sir EDWARD FRANKLAND Mr. SHIRLEY MURPHY is in practical agreement with the views which we expressed in a leading article in THE LANCET of Oct. 16th, 1897. Sir EDWARD FRANKLAND'S statement that zymotic diseases traceable to the water-supply have been absent in London since 1866 leads Mr. SHIRLEY MURPHY to pertinently point out that under the conditions which have existed, and still exist, there has been no sufficient opportunity for determining whether enteric fever has or has not been caused by water-supply. "It is no doubt true," he adds, "that there has been no mortality from this cause sufficiently large to manifest itself in the absence of a proper system of observation, but in view of the experience of 1894 I cannot assent to the statement as to the absence since the year 1866 of zymotic diseases traceable to the water-supply." Mr. SHIRLEY MURPHY concludes his remarks on these points by observing that the conditions of the present time may not always continue, that with the growth of population in the river valleys above the intakes there may be increase of pollution, and that as between the opposing forces of increase of pollution and the filtration of the water

companies the former may become the more powerful. A reference to a leading article in THE LANCET of Sept. 30th, 1893, on the Report of the Royal Commission on the Metropolitan Water Supply (presided over by Lord BALFOUR of BURLEIGH) will show that these are exactly the apprehensions we expressed at that time. It is obviously not possible to deal at length with the great number of subjects comprised in this report, subjects which, after all, have been and are being continually discussed in every number of THE LANCET. In fact, in looking through the report we cannot help being struck with the similarity of the subjects treated with those which will be found reviewed in our Annus Medicus and included in the work of THE LANCET for the year. After all this must be so, since the report is essentially one concerning sanitary administration and the health and well-being of the inhabitants of the world's greatest city. The annual report of the medical officer of the London County Council is, in fact, an index of the health of London and as such is worthy the attention and careful perusal of all those interested in sanitary problems and the elucidation of the best conditions for maintaining the health of a community.

THE address of Mr. VICTOR HORSLEY delivered before the South-West London Medical Society which we publish to-day goes to the root of all medical reform, for it discusses the Medical Acts and the position and privileges of the profession consequent upon their interpretation. We are not quite sure that Mr. HORSLEY'S reading of the law is right, but he raises the real points at issue between him and many others and he does so with a clearness such as tends to facilitate the work of members of the General Medical Council who have to administer the Acts and of legislators who are responsible for their efficiency. We may say at once that we do not agree with Mr. HORSLEY that the present Acts are efficient to protect the medical man if properly administered. We think on the contrary that they require amendment before they can be made to do what we expect of them; but though at variance with Mr. HORSLEY on this fundamental point we are none the less grateful to him for the untiring attention which he has given to the matter, or the less certain that his work is of the highest value to the profession.

Let us try to state briefly Mr. HORSLEY'S view of the present law as it affects medical practice. He tells us that the preamble of the Act of 1858 called members of the profession "qualified practitioners" and stated that it was expedient that persons needing medical aid should be able to distinguish qualified from unqualified practitioners. In the next sentences he emphasises the word "practitioner" and proceeds straightway to argue that the "Act was constructed not to protect a mere title but a person who practises his profession." We question the correctness of this view of the Act. It is not warranted by anything in the preamble, which distinctly sets forth that the protection contemplated is that of the public or rather that portion of the public "requiring medical aid." Certainly if the Act was designed for the protection of the profession it is one of the most ineffective pieces of legislature ever enacted. Mr. HORSLEY'S next and perhaps his principal point is that the Act provided a Register for medical men; that only persons on that Register are *qualified* practitioners of medicine; "and that a person who is not registered is not entitled to practice medicine and that if he does so he should be punished." He finds this view supported by the Act of 1858 as well as by that of 1886 and takes credit for having brought it into full light at the recent meeting of the General Medical Council. "The customary contention," he says, "has been that the Act only dealt with us as having a title and wherever you go you will find a rooted belief that the Medical Acts only protect our diplomas or titles and do not protect us in our practice." He bases his view chiefly on Section 34 which says "that a qualified medical practitioner is only a person registered under this Act," and adds, "the conclusion is obvious that any person who is not on the Register is within the punishment provided by Section 40," which is so familiar to the profession as imposing a penalty for falsely pretending to be a registered person. We wish that Mr. HORSLEY'S view of this clause in the Act of 1858 was beyond contention, but let us carefully consider the facts. On Mr. HORSLEY'S side is the fact that Section 40 contemplates the offender falsely pretending *to be registered* under the Act as well as using a title which would imply such registration. There are many devices for pretending to be a recognised or legally qualified medical practitioner short of using the titles which suggest registration, and doubtless if magistrates and judges had been as zealous in the cause of suppressing medical pretenders as the public interest required the first nine words of this clause would have given them ground for much more severity against quacks of all sorts than they have shown. But certainly this clause taken alone or in connexion with other clauses is but a weak ground for expecting punishment to be awarded to persons merely on the score of non-registration, as Mr. HORSLEY suggests. It is abundantly clear from Clauses 35, 36, and 37 of the Act of 1858 that registered persons alone can claim certain exemptions, hold certain medical appointments, and sign certain certificates. But we regret to say that it still is very doubtful whether the legislature ever seriously meant that all persons "practising" who are not registered were meant to be punished. What are the proofs of this? The preamble of the Act sets forth not that the public should not employ unqualified practitioners, but that it should have the means of distinguishing between qualified and unqualified practitioners. It seems here to recognise the existence of "practitioners" who are not qualified and not entitled to be registered. The same distinction is traceable in Clauses 31 and 32. The first of these provides that every person registered under the Act shall be entitled to practise according to his qualification and to demand and recover according to his qualification reasonable charges for professional aid. Clause 32 provides that no person shall be entitled to recover in any court of law for medical or surgical advice, &c., unless he shall prove upon the trial that he is registered under this Act. Besides it is unfortunate that HER MAJESTY'S Judges in the Court of Appeal have given some indications that they do not share Mr. HORSLEY'S view that non-registration is proof of non-qualification, still less that practice by a non-registered medical man can be construed into an offence that is meet for punishment. In the case of HENRY ARTHUR ALLBUTT,

who appealed from the judgment of Baron POLLOCK upholding the action of the General Medical Council in erasing ALLBUTT'S name, Lord Justice LOPES delivered the judgment of the court. Insisting on the importance of the publication of accurate minutes by the Council which should convey information to the public not only of a man's erasure from the Register but of the cause of it he used the following remarkable words: "The medical man whose name is erased is not disqualified from practising and old patients and other medical men invited to meet him in consultation might reasonably desire to know the nature of the offence in respect of which the erasure was made in order to determine whether they would still continue to employ or meet him." It is only fair to the members of the General Medical Council to say that they do not share the views expressed in these words of Lord Justice LOPES. On the contrary, they have strongly maintained that a person removed from the Register is in fact and in law an unqualified person even if retaining a degree or diploma.

We need not now further discuss Mr. HORSLEY'S views with regard to the sufficiency of the Act of 1858. But there is one more witness to the necessity for an amendment of the Acts, and that is Mr. HORSLEY himself. He admits that the Medical Defence Union found great difficulty in obtaining convictions and says it would be expedient to get an amendment of the Act for the benefit of magistrates not gifted with clear perception. He adds that all that is wanted is a simple section stating that none but registered practitioners shall be entitled to practise and that breach of the section shall be punished with fine and imprisonment. But if this is wanted it is full proof that it is not yet provided and though a simple provision it is by no means so simple as it looks or one that will be gained without practical unanimity in the profession and complete admission of the insufficiency of the existing laws. Our belief is that the Medical Acts themselves are vague and ineffective. They do not protect the public and they do not secure justice to the profession which has the responsibility of treating disease. Let us clear the ground by demonstrating this to the public and to responsible statesmen and so establish our claim to be heard when we ask for amendment of the Acts.

AMONGST the records of epidemics of typhoid fever due to infection through a contaminated milk-supply that of the outbreak at Clifton in the autumn of 1897 will rank as one of the best examples of this mode of dissemination of the disease. This, in our opinion and in the opinion apparently of the whole of the local medical profession with one solitary exception, has been proved beyond dispute by the admirable and painstaking inquiry undertaken by the medical officer of health of Bristol, Dr. D. S. DAVIES. In his interim report (of which a lengthy abstract appeared in THE LANCET of Dec. 4th, 1897) and in his remarks in the debate on the Prevention of Typhoid Fever now in progress at the Royal Medical and Chirurgical Society Dr. DAVIES presents the facts gained in his investigation in so convincing a manner that it would seem impossible for any alternative hypothesis to have been conceived, much less formulated. The manner in which it was shown that of all the infected households more than 90 per cent. were supplied wholly or partially with milk from the suspected source; that in those so supplied which escaped infection, inquiry proved that they owed their immunity to the wholesome routine of boiling their milk before consuming it; the subsidence of the outbreak with the removal of its causes and numerous incidental facts which all tell in the same direction constitute this Clifton experience an excellent example of the benefit to the community of a well-organised sanitary service as well as of the capabilities of preventive medicine. So complete has been the demonstration that it might seem hardly worth while to refer to the attempt by Mr. W. J. TIVY to proffer another explanation of the outbreak, as he did in his speech at the adjourned debate at the Royal Medical and Chirurgical Society, were it not for the fact that many well-meaning people always seem to prefer the most extraordinary solutions to those which are simple and direct. We can quite understand, too, that Mr. TIVY'S remarks should have at once been confuted by Dr. DAVIES and leading members of the profession in Bristol, whose letters, to which we shall presently refer, are now before us. For if Mr. TIVY were right and all his *confrères* wrong, Clifton could hardly be regarded as a safe place of residence.

The gist of Mr. TIVY'S contention is that the typhoid fever outbreak was rather of the nature of an endemic due to defective drainage and the invasion of houses by sewer-air from ill-ventilated and badly-flushed sewers, and that, singularly enough, the appearance of this fever almost coincided with or else closely succeeded an unusual prevalence of "influenza" of anomalous type marked by "abdominal symptoms" that occurred in the month of September. Impressed with this view of the question he minimises the alleged influence of contaminated milk in the causation of the disease, hinting at the inadequacy of the supply of milk to account for the distribution of the fever, pointing to the escape of houses that received such milk, and traversing the opinion that the contamination was effected by rinsing the cans with water that had been fouled by the dejecta of a farm labourer who was known to have been ailing with headache and diarrhœa about the time that the outbreak commenced. Mr. TIVY also pointed out that neither water nor milk had yielded typhoid bacilli, whilst he doubted the efficacy of WIDAL'S test as a diagnostic sign of typhoid fever. We may remark in passing that in his statements on WIDAL'S test he attributes to THE LANCET opinions formulated by a writer from whom we quoted. We admit that WIDAL'S test may not always be reliable apart from concomitant evidence, but if we were in doubt as to the true nature of a supposed case of "influenza" we should place much value on a positive result of the serum test as also we should upon that of EHRLICH'S diazo-reaction. And we think that in these Clifton cases Dr. DAVIES gained very material assistance by means of WIDAL'S test in the early diagnosis of cases of typhoid fever at first thought to be influenza.

In his letter Dr. DAVIES shows that Mr. TIVY himself had reported only three cases of typhoid fever, whilst from the confident way in which he speaks of the endemic influenza we may without impropriety suggest that possibly some of these cases too were examples of typhoid fever. One of

the lessons of the outbreak has been that typhoid fever and influenza are very easily confounded and in view of what happened subsequently it is quite legitimate to infer that many a case of "influenza with abdominal symptoms" really owed its origin to infection with the typhoid bacillus. However, whether this be so or not, the great fallacy which Mr. TIVY has propounded is so well put by Dr. DAVIES that we cannot do better than quote his own words. He writes: "His [i.e., Mr. TIVY'S] suggestion that the enteric fever, of which he had so little experience, was caused by the unventilated condition of the main drains of Clifton is absolutely untenable. In my interim report on the outbreak I showed that I had already traced 93·7 per cent. of the cases to infected milk. It seems inconceivable to any rational mind that sewer-gas forced indiscriminately into some 8000 houses containing over 47,000 people should attack with remarkable precision only those who obtained directly or indirectly a particular milk and should select so persistently those who consumed it raw."

Dr. SHINGLETON SMITH also writes protesting against the unwarranted statements of Mr. TIVY and pointing out how the occurrence of cases of indefinite fever thought to be influenza preceded the apparently sudden invasion of declared typhoid fever, which only goes to confirm our previously expressed view as to the real nature of that so-called "influenza." Dr. SHINGLETON SMITH adds that the Clifton profession "think that this unfortunate epidemic which has just occurred has in no degree shown that the city is in an insanitary condition as the epidemic is of a kind which might occur anywhere by contamination of milk-cans, and further it has shown that the civic authorities, whilst able and willing to do everything possible to maintain the sanitary reputation of their city, are not likely to be led astray." In every epidemic irresponsible persons are always found prone to proffer explanations which run counter to those arrived at by the patience and perseverance of the responsible authorities and that the only way for the latter to meet these critics is to show frankly, as has been so well done here, the reasons for their own conclusions. Another correspondent, Dr. BERTRAM ROGERS, not only avers his and his colleagues' firm belief in the truth of Dr. DAVIES'S "masterly report," but also teaches us a further lesson by suggesting that the sewer-air theory may be pushed too far and that hitherto the unventilated sewers of Bristol have not practically been injurious to health as judged by the death-rate. But, after all, the controversy, if so it can be called, is not one to be regarded seriously, and in spite of Mr. TIVY'S forebodings the inhabitants of Clifton may rest quietly in their beds undisturbed by fears of their approaching decimation which, were his views substantial, would inevitably one day take place.

VACCINATION AT SWINDON.—The Highworth and Swindon Board of Guardians at their meeting held on Dec. 22nd, 1897, decided by the casting vote of the chairman (Mr. A. D Hussey-Freke) to prosecute all defaulters under the Vaccination Act. For some years past no action has been taken in the matter.

Annotations.

"Ne quid nimis."

GLYCERINATED CALF VACCINE LYMPH.

THE first indications of the coming revolution in our method of vaccination are to be found in the recently issued Report to the Local Government Board on the Preparation and Storage of Glycerinated Calf Vaccine Lymph.[1] Amongst the recommendations of the late Royal Commission was one which urged that parents should not be required to submit their children to vaccination by means of any but calf lymph, whilst the evidence given by Dr. Copeman to the effect that the addition of glycerine to the lymph did not affect its efficacy whilst tending to destroy other organisms, suggested the desirability of further investigation. Accordingly Sir Richard Thorne together with Dr. Copeman visited Paris, Brussels, Dresden, Cologne, and Geneva with the view of ascertaining the measures there in force to secure supplies of calf lymph which in each of the countries concerned "has become the habitual if not the universal practice." Sir R. Thorne goes on to say in his introduction to this report that vaccination with humanised lymph though not definitely prohibited is yet officially discouraged by the Governments of these countries. Except in Paris, where provision is made for direct calf-to-arm vaccination, all the lymph is stored for distribution as glycerinated calf lymph. It appears that in Paris the practice of calf-to-arm vaccination arose to ensure confidence that the lymph used was really calf lymph and not humanised lymph, so that for the purpose calves are conveyed to the vaccination stations and to districts infected with small-pox. Of much interest are the details to be found in the body of the report as to the method of vaccinating the calves, the removal and storage of lymph after admixture with glycerine, and the extreme care taken to avoid contamination. At each institution the utmost cleanliness is observed and a well-equipped laboratory forms an essential adjunct, the latest and best of these institutions being the one at Cologne. Care is taken not to distribute any lymph until the animal yielding it has been slaughtered and reported to be free from disease, a precaution mainly adopted to insure against risk of conveyance of tuberculosis, although, as Sir R. Thorne observes, "such risk would under any circumstances be a very remote one, seeing that tuberculosis is extremely rare in young bovine animals and seeing also that the tubercle bacillus when experimentally added to a mixture of lymph and an aqueous solution of glycerine rapidly loses its vitality." The conclusions which he submits are so important that we give them verbatim:—

"1st. It is desirable that vaccination, both primary and secondary, carried out under the auspices of the Government should be performed exclusively with vaccine lymph derived from the calf.

"2nd. There will probably be advantage in retaining, for a time at least, the system of calf-to-arm vaccination at the Board's Animal Vaccine Station for such parents and others as may specially desire it and for the purposes of comparing its results with those following the use of calf-lymph preserved in one or another way.

"3rd. The distribution of calf-vaccine from the National Vaccine Establishment should be limited to glycerinated or similar preparations of lymph and pulp material in air-tight tubes or other glass receptacles.

"4th. To give effect to the above it will be requisite that the Board's Animal Vaccine Station should be reorganised

[1] Report to the Local Government Board on the Preparation and Storage of Glycerinated Calf Lymph; with an Introduction by the Medical Officer. London, Eyre and Spottiswoode. 1897. Price 1d.

both as regards construction and administration. Notably will it be requisite that it should include a properly equipped laboratory under the direct supervision of a bacteriological expert."

THE DISTRIBUTION OF THE MEDICAL PROFESSION.

THE issue for 1898 of the invaluable Medical Directory shows, it is true, that there has been an increase in the number of registered practitioners over the number for last year, but the increase of 1898 over 1897—namely, 619—is less than the increase of 1897 over 1896, which was 958. The whole number of practitioners spread throughout the Empire for 1898 is 34,903, as against 34,284 in 1897, and they are distributed as follows, the numbers given in brackets being those of 1897 for comparison:—Number of practitioners in the London list, 6081 (5992); in England, excluding London, 15 400 (15,081); in Wales, 1081 (1062); in Scotland, 3412 (3389); in Ireland, 2615 (2598); practitioners resident abroad, 3770 (3652); naval, military, and Indian medical services, excluding those which appear also in other lists, 2521 (2510); too late list, 23 (20). During last year 599 members of the profession died, as against 497 in 1896. Besides the merely statistical part of the work there is every kind of information of value to the medical profession and the book is as usual indispensable.

IS IMPORTED MILK PURE AND SAFE?

IN an annotation in THE LANCET of May 4th, 1895, p. 1130, we wrote as follows: "The rapidly increasing importation of frozen milk from Holland, Sweden, and other places abroad opens a serious question, since as far as we can gather there is no guarantee of its being derived from an uncontaminated source. Our own centres of milk production are of course placed under strict sanitary regulation, so that as far as possible disease may not be disseminated by the means of so ready a carrier as milk has been proved to be. The efforts therefore of our sanitary authorities to keep milk-borne diseases under may, for aught we know, be seriously handicapped. We trust that the Government will make some inquiries into this important and, it may be, very serious matter." The importance of an inquiry in this direction being established has at any rate appealed to the Commissioners of Sewers of the City of London, who, at a meeting held at the Guildhall on Nov. 30th, 1897, received some instructive particulars from the sanitary committee appointed to inquire into this question. From the report it appears that in 1894 161,633 gallons, and during the eleven months of November, 1895, 124 915 gallons of milk and cream were imported into the United Kingdom from Sweden, Holland, Belgium, Norway, Denmark, and North Russia. Of the latter quantity Sweden contributed 109,428 gallons and Holland 14,103 gallons; of the balance—1384 gallons—one-half was imported from Norway, whilst the remainder came from Belgium, Denmark, and North Russia. The committee made it their business through the Foreign Office to obtain copies of the regulations in force in these countries for the prevention of the sale of possibly infected milk, and the despatches subsequently received from the English Consuls have been compiled and printed in *brochure* form. In Belgium the necessity for the special inspection of dairy farms is universally recognised, and the Belgian Government are considering the organisation of this service, but at present no regulations appear to have been publicly issued upon the subject. In the Royal decrees applying to the sale of milk there is no reference made to milk sent out of the country. In Sweden there are no regulations in force under which cattle are reared and kept, this being left entirely to the means and judgment of the agriculturist, nor are there any regulations providing for the inspection of milk and cream intended for export. With regard to the small quantity of milk exported from Finland no regulations are in force for insuring the purity of this supply. In Holland a recent decree has been published which contains all the regulations enforced by the Government with the view to insuring the purity of the milk-supply. In Denmark care appears to be enforced in dealing with infected animals but we find no marked reference to milk sent out of the country. On the whole, therefore, the apprehensions which we expressed over two years ago are justified, for we cannot find any sure and certain evidence in the report now before the honourable court of the Commissioners of Sewers that the milk imported into this country from abroad is of guaranteed purity and quality. Apart altogether from the serious issues which this may involve upon the health of the community it is a gross injustice to the milk traders at home. We trust that the Government will promptly consider this valuable document and act forthwith in accordance with the real and serious necessities of the situation therein indicated.

A TRAMWAY FOR THE THAMES EMBANKMENT.

IT is earnestly to be hoped that strenuous opposition may be offered to the Bill shortly to be brought before Parliament for constructing a tramway along the Thames Embankment. It will be remembered that a similar scheme was promoted some ten years ago but was, in our opinion, most fortunately defeated. There is, however, always a danger that a project of this kind may obtain the sanction of Parliament merely through the unwillingness of private persons to take the requisite trouble to secure its rejection. What is everybody's business is no one's business. The competition of the projected tramway with the District Railway enables us to hope that that company will range itself against a project which threatens to draw off a considerable number of travellers from the section of its line between Westminster Bridge and Blackfriars. Our own objections to the scheme we may set down briefly. In the first place, on financial grounds it is obviously absurd to permit the Thames Embankment, on the beautifying of which tens of thousands of pounds have been spent, to be rendered hideous by processions of tramcars. Practical economy too often is at variance with æsthetic pleas, but in this instance it endorses them. The money has been spent actually with a view to purchase the beauty, so that to spoil the beauty is to waste the money. The Embankment with its unequalled prospect of river and shipping makes a beautiful driving road, almost the only one in the heart of London with any pretensions to beauty which is not too much crowded for pleasure. The construction of it was a costly undertaking and it has been invaluable as relieving the congested traffic of Fleet-street and the Strand. Here we come to a second reason why to cut up this fine roadway is a wanton waste. When cars run upon tram lines on the Embankment its use to relieve the Strand and Fleet-street will be well-nigh gone. It will itself become an inconvenient route. Anyone who doubts this need not go so far as Chicago or Toronto for a confirmation; he has only to pay a visit to the Old Kent-road or any similar road in south London, to the Kentish Town and Camden-roads in north London or to the Hammersmith-road in the west. He will then realise how great is the inconvenience caused by these vehicles. Were we writing in abuse of trams we might add that the horse-tram is very hard on the loins of the horses, that the vapours from the steam-tram are at least as cruel to the

respiratory passages of men and women, and that the overhead wires of the electric-tram make a prospect that is hideous as well as perilous; but our intention is not so general—or so foolish. Trams have many reasons for their existence and serve a large body of citizens so well that for every fault to be urged against them we could find a virtue. But the projected tramway between Westminster and Blackfriars is a mistake because the locality is totally unsuitable, so that the advantages of the scheme, if any, are lost beneath the disadvantages which are obvious and weighty. We note also that a warning voice has been raised in the *Pall Mall Gazette* against the construction of any new tramways in London while vehicular traffic is in its present revolutionary state. The days of the horse are possibly numbered as far as much urban employment is concerned. Many believe that in twenty years all our omnibuses and cabs and most of our carts, vans, and drays required for town use will be worked by electric motor power and that the horse will retire to a fitter sphere in the country. When the horse is no longer to be considered asphalte pavement can take the place of wood in all our city thoroughfares to the great advantage of the health of the communities, and the motor cab or omnibus with its rubber tires running more smoothly and much more silently than any car on its lines, will not be the serious hindrance to traffic which the tramcar must always be. The extent to which the immediate future will see our streets pervaded by auto-motor vehicles we do not attempt to guess, but that the horse will be superseded to some extent is undoubted. It may therefore soon become a question whether the various tram lines which at present deform our suburban streets should not be removed to make room for their more cleanly and convenient rivals, and if they are removed the companies will rightly put in a claim for compensation. Is it wise under these circumstances to permit any more lines to be laid down in our streets with the possibility that some few years hence the ratepayer may have to pay for having them taken up again? We think not and we trust that the projected line on the Embankment may come to nothing.

THE FREE USE OF ISOLATION HOSPITALS BY THE WELL-TO-DO.

A SOMEWHAT warm but very interesting discussion has been going on at Hull in reference to the use of municipal isolation hospitals by people who are not poor. This discussion has extended over a year or two and the practice as to charging has varied from time to time. At first it was resolved to leave the question of charging to the medical officer of health. It was found that the charges so made were constantly appealed against and caused much dissatisfaction and irritation. The free system was then tried till February last when the system of charging was again introduced only to give rise to more discussion which has again ended in the passing of the following resolution: "That in future the corporation make no charge for the expense of maintaining patients in the fever hospital." The arguments by which this proposition was supported were as follows: that isolation is in the interest of the community and that as the ratepayers are taxed to build and maintain the institution it would be morally wrong to ask them to pay for their own maintenance therein. Such flimsy arguments may satisfy those who think any reasoning good that saves their pocket. But they are not worthy of strong and independent men. Isolation is a duty binding on the citizen whether he is at home or in an isolation hospital. But that it is right for him to pay his own expenses if he can in an isolation hospital seems to us very clear. It would never be thought morally right for a comfortable ratepayer to betake himself in an emergency to the workhouse which his rates have helped to build and maintain and to be kept there as a pauper. A pauper he would be all the same because he was evading his own personal liabilities under an arrangement meant for the poor and not for him. The fallacies with the use of which Mr. Parrett carried his resolution have been well exposed in the local papers by Mr. Holder, whose manly defence of the principles of independence must commend it to all generous people. No doubt infectious disease is a trying experience to comfortable people, but they should meet it at home where this is possible and not at other people's expense. Where this is not possible the community is rightly called on to provide isolation. If the richer classes take to using the isolation hospital they will simply exclude the poor, for, as Mr. Holder says, there were 8000 cases of infection last year in Hull of which only 300 or 400 found accommodation in the isolation hospital. Mr. Parrett admits that the law is against him. We venture to think that morality is against him too. If the comfortable classes want accommodation for their infectious cases let it be provided in separate wards with their own medical attendant in charge.

HOSPITAL ABUSE AT NEWPORT INFIRMARY.

As will be seen by the correspondence which we publish in another column the house committee of the Newport Infirmary have taken up a ridiculous attitude. They met the honorary medical staff to consider the matter with regard to Mr. Ensor and then wrote to that gentleman enclosing for his signature an unqualified form of apology. To this Mr. Ensor replied that he did not regret what he had done and that he therefore declined to apologise. So here we suppose the affair will rest and the Newport Infirmary will lose the services of a valuable officer. It seems to us that the house committee's position is the reverse of enviable now that they have sanctioned the silly letter to Mr. Ensor. They do not seem to care for the efficiency of the infirmary or for the real good of the patients; the fact that the charity which they are supposed to direct is abused does not concern them, at least they do not discuss this side of the matter; but the dignity of the lay governors must be maintained at all costs and some balm applied to their wounded feelings—that is how their recent epistle must be construed. For a mere surgeon to say that he does not consider a patient a fit object for charity is an insult to them and one not to be borne. He must be dismissed or lick the dust. We very much doubt whether these stately persons will find it as easy as they think to fill Mr. Ensor's place and it is quite possible that they will not retain the services of his former colleagues unless they can contrive to temper their sense of their own worth with a little feeling for other matters, trifling in comparison may be, but still of some importance to the subscribers to the Newport Infirmary as well as to the charitable world at large.

THE MIDDLEMORE LECTURE.

THE annual lecture under the Middlemore trust was delivered at the Birmingham and Midland Eye Hospital on Dec. 16th, 1897, by Mr. Eales, who dealt with the causes of exopthalmos. Having described the various conditions underlying it together with their differential diagnosis and treatment under the head of "Tumours," he drew special attention to the importance of early diagnosis and to the great facility afforded to this end by resection of the external rectus which allowed complete digital examination of the orbit to be made by introducing the little finger into Ténon's capsule behind the globe, in which way the presence or absence of tumour, not capable

of detection in the ordinary way, could be easily and certainly determined and delay in dealing with it prevented. He narrated a case where by this means a tumour of the optic nerve was at once diagnosed though there was no interference with ocular movements. Vision was normal, equalling $\frac{6}{6}$. The perimeter showed the field of vision to be normal and the optic disc appeared normal, proptosis being the only obvious symptom. The patient and the specimen were shown. He also referred to another case where, no tumour being found in the orbit, the muscle was replaced and the patient subsequently died with symptoms of intracranial disease without further evidence of growth in the orbit. Several interesting cases and specimens were shown in illustration of the lecture.

A WORD OF THANKS.

"PATERFAMILIAS," in whose behalf we recently appealed to the profession under circumstances which will be found on page 1608 of THE LANCET of Dec. 18th, 1897, wishes to express through our columns "his deep gratitude to those good, kind friends who have so generously and so promptly helped him out of what was to him an insuperable difficulty." We wish to add to this a few words of thanks from ourselves. The whole of the thirty pounds was made up at once and a cheque was sent to "Paterfamilias" to reach him on Christmas Eve, while later subscriptions have been returned. The generosity which has been displayed in this matter has been as delicate as ready, for in every case the donor has stipulated that his name should not appear.

A GODALMING MYSTERY.

THE inquiry in this case brought forward some interesting medico-legal points. On Nov. 3rd a girl named Edith Wiles, twelve years of age, was missed from her home, and the fate which had befallen her remained a mystery until Nov. 22nd, when the body was found in the river a little below Unsted iron bridge. The medical man who was first called said that on examining the body he found what he should call three marks of violence; one on the right eye, which completely blackened it, might have been caused by a fall or a blow, and was inflicted before death, there was another on the left side of the middle of the throat, there being a faint line also on the right side which was caused during life or immediately after death by, in his opinion, something being tied tightly round the neck, and on removing the scalp he found a large bruise about half an inch from the centre of the skull. There was a large clot of blood between the scalp and the skull. In his opinion this injury was caused by a blow. In view of this evidence the coroner adjourned the inquest and one of the county divisional police surgeons examined the body. This witness stated that the "signs of strangulation" on the right side of the neck described by the other medical witness were, in his opinion, due to the skin from the other side of the neck having been accidentally pulled across in the process of sewing up the post-mortem incisions. The other signs of supposed strangulation were uncertain owing to the decomposed state of the body, but the witness thought that they were most probably caused after the body had been immersed in the water. With regard to the black eye and the bruise on the top of the head he thought that the body was too much decomposed to form any opinion as to whether they were caused ante mortem or post mortem. We are inclined to agree with the views of this second witness. Injuries very similar to those produced by assault are frequently found on bodies which have lain three weeks in running water, as was the case in this instance; portions of trees may knock against the body or contact with the bottom of the river or objects on the bank may produce injuries which by reason of post-mortem decomposition may become indistinguishable from those caused by personal violence. Numerous cases are on record corroborating these statements. Another point to which attention was called was that the stomach was full of water and food and this might have been adduced as strong evidence that the deceased was alive on entering the water. Experience has shown, however, that this test is open to many fallacies, Liman's experiments particularly throwing much light on this subject; he concludes that the occurrence of water in the stomach may be simply a post-mortem accident.

THE MAIDSTONE EPIDEMIC AND THE MEDICAL PROFESSION.

THE claims of the medical profession for attending the necessitous cases among the 1900 cases of typhoid fever at Maidstone are now being considered. It is in the nature of medical claims to come in late for attention when the services exacted and cheerfully rendered in a time of strain cannot well be realised. We commend this fact to the attention of the Relief Committee. It would be better to postpone the settlement of these claims till the town has recovered itself than to treat them lightly and inadequately. Had the visitation been one of cholera instead of typhoid fever there would have been no question of properly rewarding medical men for work involving special risk to their own lives as well as an enormous amount of care and skill. It would be difficult to exaggerate the value of the medical man in the time of such a calamity and it will be hard if he is to be appraised superficially as an ordinary creditor.

THE ECONOMIC AND HYGIENIC DISPOSAL OF CONDEMNED MEAT AND ANIMAL CARCASSES.

THE satisfactory disposal of offensive matters is one of those troublesome problems with which medical officers of health, sanitary authorities, and others are constantly confronted. Cremation is expensive and it yields no return except a practically valueless mineral residue. The subject is one of the first importance to the health of the community since with the increasing quantity of animal food consumed by an ever-increasing population the amount of waste and loss must expand in the same proportion. The question has been taken up seriously by the health authorities of the city of Nottingham, who a short time ago appointed a deputation to visit the working of an apparatus in Essen in Germany, where three machines were stated to be in full work in the well-appointed public abattoirs of that town. The apparatus referred to is known as the Otte apparatus and consists essentially of a big jacketed cylinder in which animal refuse, carcasses, flesh, and other organic materials are reduced by means of superheated steam. Attached to this revolving cylinder are receivers for containing the fat and gelatin separated during the process. The residual fibrous mass affords an excellent manure after it has been desiccated. The fat commands a fair price and the gelatin, &c., can be used for making size but not, it appears, for glue. The dried residue, it is said, makes also wholesome and rich food for pigs and poultry. There is no perceptible smell or offence connected with these operations. It would appear therefore that the process has a business value apart from the hygienic function which it apparently carries out effectually. The medical officer of health of Nottingham, Dr. Philip Boobbyer, has drawn up an interesting and valuable report upon the results witnessed at Essen. It is remarked in this report that while the members of the deputation cannot but feel that the Otte apparatus is one of great value for the means it affords of disposing innocuously and profitably of material which

commonly gives rise to much nuisance, they are also of opinion that the purchase of the plant by the Nottingham Corporation at the present time would be altogether premature, for they cannot but realise that it is only when used in conjunction with public abattoirs that its full utility could be manifested. At the same time it is suggested that if any private persons are prepared to establish an installation of such plant at their own charge and risk upon a suitable site in Nottingham the deputation are of opinion that a licence for such establishment should be granted. We learn later that an installation of the apparatus is about to be commenced in Nottingham.

POISONING BY TYROTOXICON.

AT this time of the year cases of ptomaine poisoning are comparatively rare, although in the summer they occur much more frequently. Some interest therefore is attached to an inquest recently held at Halifax on the body of a child, aged four years, who was put to bed on Nov. 27th apparently in her usual health but was taken ill at seven o'clock the following morning and died in a few hours. A post-mortem examination was made by Mr. Strickland, who deposed that death was due to some poisoning the exact nature of which he was unable to specify. It was suggested that the girl might have sucked the colouring from a doll which she took to bed with her, but it was also further mentioned that she had partaken of some ice-cream which might have caused the symptoms. The coroner directed Mr. W. Ackroyd, the borough analyst, to make an analysis, and he expressed the opinion that the symptoms and post-mortem examination pointed to poisoning by tyrotoxicon, a substance derived from unwholesome milk. He examined the ice-cream for tyrotoxicon but found none present. He gave some useful hints, however, that duly found their way into the press—namely, that this substance was destroyed by a temperature of 90° C. and consequently, if milk were boiled, should tyrotoxicon be present it would be destroyed. This adds another warning to the community at large against drinking milk that has not been boiled, and points the necessity that farmers and milk dealers should scald out the utensils in which they place milk.

THE TYPEWRITER AND HEALTH.

THE typewriter has won its way so completely wherever much writing is done that any evidence of the influence which it may exert upon health deserves attention. The *Phonetic Journal* publishes a note from a correspondent who, in response to the question "Has anyone ever known of a genuine case of typewriters' cramp induced in a normal constitution by the use of any standard machine?" replies that he suffers from cramp so produced and has heard of two other cases. The *Phonetic Journal* was in the first instance disposed to doubt the existence of typewriters' cramp, but admits that the case of its correspondent is a genuine example of the affection. Typewriters' cramp belongs to what Dr. Poore calls the professional impotencies, and its occurrence after the nimble, oft-repeated movements of the typewriter's hand and fingers is a thing no more to be wondered at than pianists' cramp, compositors' cramp or tailors' cramp. In the course of time it is but too probable that typewriters' cramp will become, if not as well known, at least as recognisable as ordinary writers' cramp. But if the spread of the typewriter brings to its user the risk of cramp there is, if an American journal is to be believed, a balance of advantage to be set down in its favour. "The death-dealing corset," we are told, "has found in the typewriting machine and the bicycle two implacable foes." No expert can manage either the typewriter or the bicycle while she is held in "a close-fitting cage of whalebone and steel." If the wheel and the typewriter have done much for woman not the least of the blessings they may bring is in helping to set her free from what *The New Education* describes as "the cramping, uncomfortable, health-destroying, ugly, and barbarous mediæval invention called the corset." This is vigorous language, but if the contention is good and capable of proof then the influence of the typewriter on the health of at least the female section of those who use it must, in spite of the risk of typewriter's cramp, be regarded as beneficial.

A CASE OF CORYZA APPARENTLY OF DENTAL ORIGIN.

AT a recent meeting of the Manchester Odontological Society Mr. E. P. Collett brought forward an interesting case of coryza due apparently to dental irritation. The patient in question, a medical man, had suffered from persistent coryza, mainly unilateral, for three or four weeks. He consulted a colleague who carefully examined him and was unable to find any physical cause except some stigmata on the middle turbinated bone associated with general vaso-motor dilatation of the membrane. A 4-per-cent. solution of cocaine was prescribed for local use together with general treatment. The coryza, however, did not lessen, and neuralgic pain in the region of the temple, over the malar bone, and subsequently behind the right ear, supervened. He then consulted Mr. Collett, who removed the first maxillary premolar which showed signs of chronic periodontitis. No pus was evacuated. The pain had entirely gone by the morning following the removal of the root, the coryza completely disappearing in the course of three days.

THE PERSHORE GUARDIANS AND THEIR MEDICAL OFFICERS.

ONE of the many unfortunate results of the present overworked and underpaid state of the profession is that it is unrepresented on the various public bodies which are the employers of medical knowledge in different capacities. When a medical man is asked to stand for the vestry or the board of guardians or county council of his district he naturally replies that he has not the time to devote to these matters. The grocer or other tradesmen who calls for his orders each morning can leave the counter in charge of an assistant to attend the board meetings. But if the medical man is out of the way at any moment he may be wanted, his patient does not hesitate to send for another practitioner just round the corner whose fees perhaps are a trifle less. The consequence of this unhappy state of things is that the medical officials of a board of guardians, for example, lack representation on the board, and our friend the grocer, or some other member of the board who seeks for cheap notoriety, moves a resolution that the advertisement for candidates for the vacant post of district medical officer shall stipulate that the person appointed must give an undertaking not to claim a pension under the recent Poor-law Officers Superannuation Act (1896). Something of this kind has, as a matter of fact, happened at Pershore. Surely such an act of palpable injustice as this would never have commended itself to a majority of the Pershore guardians if someone had been present to point out that the fund raised under that Act from which pensions are awarded is formed mainly, if not altogether—as it certainly will be in the future—by contributions compulsorily deducted from the salaries of Poor-law officials, including that of the parish medical officer, and not from the rates, as the guardian who moved the resolution seems to think. We sincerely trust that no member of the profession will so far forget the duty he owes to the profession as to apply for the post at Pershore

under such unjust conditions. The salaries attached to these posts are at all times wholly inadequate to the work done, and the new Act which, as we have pointed out, is not without flaw, does but very imperfectly compensate an official in his declining years—i.e., when he reaches sixty or sixty-five—for all the time he has to spend in the service of the guardians. We trust that this matter will receive the attention of the Local Government Board; and the moral to be derived from the whole is this—that wherever a medical man can see his way to take a more active part in local affairs he ought to do so, not only because his medical knowledge is often of special value on many points concerning the public weal which have to be decided, but also in order that he may indicate, when occasion arises, that such parsimonious acts as these, besides being unjust, inevitably tend to lower the status of the candidates coming forward, even if any can be found, and are really detrimental to the public service.

THE WATER-SUPPLY OF TORQUAY.

THE Town Council of Torquay have decided to purchase the catchment area of their water-supply. This course has long been recommended by their medical officer of health, Mr. Karkeek. It was necessary to obtain an Act of Parliament to enable the corporation to buy the land, and the Act was obtained during the past year. The water sub-committee of the Torquay corporation decided in October last to advise the council to avail themselves of the new Act and forthwith to acquire the whole of the land with the primary object of removing all human habitations from the water-shed and of effecting such other alterations for safeguarding the water as might be found necessary. There was some local opposition to carrying out the purchase scheme and it was urged that the corporation should first obtain expert advice with regard to the filtration of the water. By a large majority the council have decided that the purchase of the land shall be completed without further delay. We heartily congratulate the corporation of Torquay on the wisdom of the course they have adopted.

SUBJECTIVE SENSATIONS IN EPILEPSY.

IN a paper in the December number of the *Practitioner* Dr. Campbell Thomson in the course of some remarks on the importance of these "warnings," both in reference to their usefulness to the patient and their significance as indicating the probable seat of the discharging lesion in the brain, refers to some cases which have come under his notice. The first case was that of a man thirty-seven years of age who had been subject to fits since the age of twenty-one years. Preceding a fit there was usually considerable psychical disturbance which began about twelve hours before the fit and was characterised by strange weird presentiments, quite indefinable, often accompanied by sudden recollections of trifling things that had happened in childhood and loss of memory for things connected with his everyday life of the present. The second case was that of a man of thirty years of age who had suffered from fits since childhood. In his case the "warnings" commenced with a startled feeling followed by cramp-like pains in the left hand and arm, sometimes extending to the left side of the face and sometimes associated with a bitter taste. He also nearly always heard at these times a monotonous ticking in the left ear and at the last moment just before losing consciousness he experienced a choking sensation. This somewhat elaborate aura lasted as a rule for about half an hour. The former case, Dr. Campbell Thomson remarks, probably illustrates the condition described by Dr. Hughlings Jackson as the "dreamy state" or intellectual aura. The third case described is that of a young man admitted to the Middlesex Hospital, under the care of Dr. Kingston Fowler, complaining of severe pain in the head. He had had since childhood a chronic discharge from the right ear, and although he had never had any fits he stated that he occasionally felt giddy and at the same time experienced peculiar sensations of smell which he could not accurately describe except that they were very unpleasant. A few hours after admission he became delirious and died suddenly, and at the necropsy he was found to have an abscess situated in the anterior part of the right temporo-sphenoidal lobe. In more than one case a lesion in this region has given rise to an olfactory aura similar to that here described.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

H.R.H. THE PRINCE OF WALES, after consultation with the Council of the Fund, has decided to distribute the funds at his disposal for the year 1897 in the following way. A sum of £22,050, representing the annual subscriptions promised plus the amount of interest on investments already made, will be divided among the hospitals where more than 100 beds are in constant occupation. The moneys received from the sale of stamps, probably about £38,000, will be divided among such institutions "as come under the classification of hospitals"; but the secretaries in their statement give no information as to the plan upon which the distribution will be made. The most pressing wants of the larger hospitals will thus, it is expected, be relieved for this year, and the Council hope that "it is only reasonable to suppose that in future years the income of the Fund will be sufficient to meet their requirements." Wards which for want of funds have been closed at Guy's, St. Thomas's, and other places will be at once re-opened and certain of the requirements of other hospitals will be met which neither annual subscriptions nor Hospital Saturday and Sunday Funds have hitherto been able to deal with. The Fund for this year will remove much anxiety from hospital managers, and it is to be hoped that when the public see the good work that it has accomplished in the first year of its existence they "will subscribe to it annually and will endeavour by organised and systematic contributions to render its future secure." This hope of the Council we cordially re-echo, for the Prince has had a noble idea and has spared no personal pains whatever to transform his idea into practical and beneficent reality. We have a few words to add in the hope that our readers will take every opportunity to point out the truth of them to all with whom they come into contact. To abstain from a wonted subscription in order to subscribe to the new fund will be a poor compliment to His Royal Highness and a bad imitation of charity. The honorary secretaries of the Fund have received from Sir Edward Lawson 755,599 shillings and sevenpence (£37,779 19*s.* 7*d.*), being the amount received up to Dec. 24th, 1897, in answer to the appeal on behalf of the Prince of Wales's Jubilee Hospital Fund, only the cost of collection out-of-pocket expenses being deducted, no charge whatever having been made on account of the *Daily Telegraph* itself or any member of its staff.

FACIAL NUCLEUS IN FACIAL PARALYSIS.

IN the November number of the *Journal of Experimental Medicine* Dr. Adolf Meyer records an interesting condition. The patient was a general paralytic admitted to an asylum in November, 1894. He died on March 26th, 1896, but ten days before death he was noticed to have complete left-sided facial paralysis. The examination of the medulla is all that is described in the paper under notice. This was carried out by Nissl's method and the cells of the facial nucleus showed the characteristic changes described

by Nissl in his experiments on rabbits—viz., swelling of most of the cells, dust-like decay of granules, in many cells an almost homogeneous swelling of part of the cell body, dislocation of the nucleus to the surface in many cells, and irregular contour of the nuclear membrane. The homogeneous swelling in many places seemed to form a firm, yellowish pigment-like substance. The nuclei in most cells showed a diffused bluish colour and many nucleoli little vacuoles or notches. There was no evidence of decussation of elements of the seventh nerve. The terminal nuclei of the eighth nerve, both dorsal and ventral, showed well circumscribed neuroglia cell infiltration, whereas the nucleus of Deiters was almost completely free. Examination of the contents of the internal auditory canal showed that there were a number of hæmorrhages and round cell infiltration of the periosteum, compressing both nerves and ganglion, the ganglion being infiltrated also with leucocytes. Dr. Meyer remarks that the case does not support the doctrine of a decussation of the facial roots but points rather to a relative independence of the nucleus of Deiters from the auditory nerve endings, and it illustrates how an affection of one fibre system may involve the cells of another system with which it comes in contact.

THE TOWN AND THE MEDICAL PROFESSION OF BATH.

A VERY large and interesting meeting of nearly the whole profession of Bath has lately been held on the invitation of the mayor to discuss and formulate schemes for the coöperation of the profession and the corporation in developing the usefulness and prosperity of Bath and its spas. Bath is to be congratulated on having a mayor who appreciates the importance of such coöperation. He paid a high compliment to the late Mr. Freeman which was echoed by other speakers. He then proceeded to explain his desire to have a strong committee of medical men representative of the whole profession in Bath to which the baths committee of the corporation could look for advice and guidance when professional questions arose touching the efficiency of these baths. The meeting was addressed by Mr. Beaumont (honorary secretary of the Bath and Bristol Branch of the British Medical Association), Dr. McDermott, Dr. Weatherley, Mr. Craddock, Dr. Kerr, Mr. Coppinger, Dr. Hardyman, Dr. Wohlmann, Mr. Trevelyan, Dr. Wigmore, Dr. Field, Mr. Cowan, Mr. Scott, Mr. White, Mr. Hopkins, Mr. Terry, and Mr. Davies. Mr. Beaumont suggested various schemes for a committee representative of all practitioners in Bath, so as to do away with anything that might create the feeling of favouritism or exclusiveness in relation to the baths or the baths committee. The mayor interposed from time to time with excellent suggestions and in the end the meeting agreed unanimously to his worship's suggestion that the whole medical profession of Bath should constitute a committee for the above purpose and that the general committee should appoint an executive committee and a sub-committee. The harmony of the meeting and the unanimous acceptance of the practical proposal of the mayor, with his assurance that the question shall be viewed in all its aspects by the corporation, are the best assurance that Bath will not be behind other places at home and abroad which have lately shown remarkable energy in making themselves as health resorts at once efficient and attractive.

THE EXMOUTH URBAN DISTRICT COUNCIL AND THE MEDICAL OFFICER OF HEALTH.

THE Exmouth Urban District Council seem to have curious views on the subject of sanitation. On Dec. 8th, 1897, a letter appeared in the *Times* from Dr. Kempe, the medical officer of health, pointing out that the Exmouth death-rate was only 6 per 1000, and adding that "a little sanitary energy on the part of the council would elevate this health resort into a place of envy. It is to be hoped that the council will now give the surveyor the necessary assistance and re-lay the old street sewers and attend to the other matters reported upon without delay." This very temperate and sensible letter stirred up the bile of the council, and at a special meeting held on Dec. 16th, 1897, Dr. Kempe was solemnly censured, told to apologise, and asked to resign. One councillor, a Mr. Ley, is reported in the *Exmouth Chronicle* of Dec. 18th as saying: "It was not a part of the duty of the medical officer to report on drains at all. He was not an engineer and it was not his duty to report anything outside his work." Our readers will doubtless remember that in our issue of April 3rd we quoted the following from an article which appeared in an evening contemporary relative to a hypothetical village called Suretonin-the-Mud. An eminent rural councillor was there represented as saying: "'No, my young sir, I don't say but what the doctor 'asn't performed 'is dooties satisfact'ry; I don't say but what 'e is hequal to 'is job, but what I do say is that being medical orficer 'e 'as no call to go a-snuffling about the drains for to raise the rates of the parish.' 'But the outbreak of typhoid?' 'That's what 'e's there for. If there wasn't no typhoid we shouldn't want no medical horficer, should us? It stands to reason.'" This article must have been written in a prophetic spirit. To turn to present facts Dr. Kempe has been asked to resign merely, so far as we can see, because, having reported upon the condition of the sewers and requested their relaying, nothing has been done and Dr. Kempe has had the audacity to say so. As for it not being the duty of a medical officer to look after the drains the remark of Mr. Ley is so silly that it needs no further comment. If the Exmouth councillors will not do their duty it remains to invoke the Local Government Board—a body which grinds slowly, but, as the recalcitrant councillors will find grinds exceeding small.

THE British Institute of Public Health will be styled in future the Royal Institute of Public Health, and Her Majesty the Queen has been graciously pleased to accept the office of patron. The council of the Institute has conferred the Harben Gold Medal for 1898 upon Lord Playfair and has appointed Dr. W. R. Smith the Harben Lecturer for the year 1899. The offices of the Institute have been removed from 20, Hanover-square to 197, High Holborn, W.C.

WE understand that Dr. J. C. Thresh, the medical officer of health to the Essex County Council, is a candidate for the appointment of Professor of Hygiene in King's College, London. As practical sanitarian, successful author, and sound man of science alike Dr. Thresh possesses very high qualifications for the post he seeks.

THE Sydney meeting of the Australasian Association for the Advancement of Science (seventh session) will commence on Jan. 6th, 1898. Professor A. Liversidge, M.A., LL.D., F.R.S., who is the permanent honorary secretary, will act as President.

THE Queen has approved of the appointment of William Carnegie Brown, M.D. Aberd., to be an Unofficial Member of the Legislative Council of the Straits Settlements.

THERE will be the usual half-yearly meeting of Fellows of the Royal College of Surgeons of England on Thursday next, Jan. 6th, 1898, in Lincoln's-inn Fields at 4 P.M.

AT a special meeting of the President and Fellows of the Royal College of Physicians of Ireland held on Friday,

Dec. 17th, 1897, Sir William Richard Gowers, M.D., F.R.S., &c., was elected an Honorary Fellow.

THE Local Government Board have determined to direct inquiry into the causes of the recent outbreak of typhoid fever at Maidstone.

H.R.H. PRINCESS LOUISE, Marchioness of Lorne, has consented to become Patroness of the Nurses' Coöperation, New Cavendish-street.

Pharmacology and Therapeutics.

TINCTURE OF MYRRH IN DIPHTHERIA.

DR. STRÖLL, writing in the *Allgemeine Medicinische Central-Zeitung*, very strongly recommends tincture of myrrh in diphtheria. The mixture he uses is composed of tincture of myrrh 4 parts, glycerine 8 parts, and distilled water to 200 parts. This is given very frequently—every hour or even every half-hour in the day-time and every two hours at night, infants up to the age of two taking a large teaspoonful (seventy-five minims), older children double that quantity and adults three times as much. This is continued until the membrane has nearly disappeared, when the doses are only given every two hours. After all the membrane has gone the treatment is continued for a couple of days, the interval between the doses being increased to three hours. This, of course, is with the view of preventing any recurrence. Usually the fever and lassitude disappear in twenty-four hours, so that a child may frequently be found within that time sitting up in bed playing. He says that there does not seem to be any need for local treatment but in the case of older children and adults a gargle containing one half per cent. resorcin may be employed every hour or oftener in the day-time and where it is desired the tonsils may be painted every hour with the tincture of myrrh undiluted. Where the larynx is involved Dr. Ströll prescribes the myrrh and glycerine mixture in an inhaler or spray to be used every half hour. By the employment of this method Dr. Ströll states that he has only lost one case out of eighty and he has collected reports from several other practitioners in various parts of the world who have treated altogether 182 cases with 22 deaths. No mention, however, is made in his own or in the other cases of bacteriological verification of the diagnoses. The *rationale* of the efficacy of myrrh is supposed by Dr. Ströll to be that this drug increases the phagocytic elements in the tonsils.

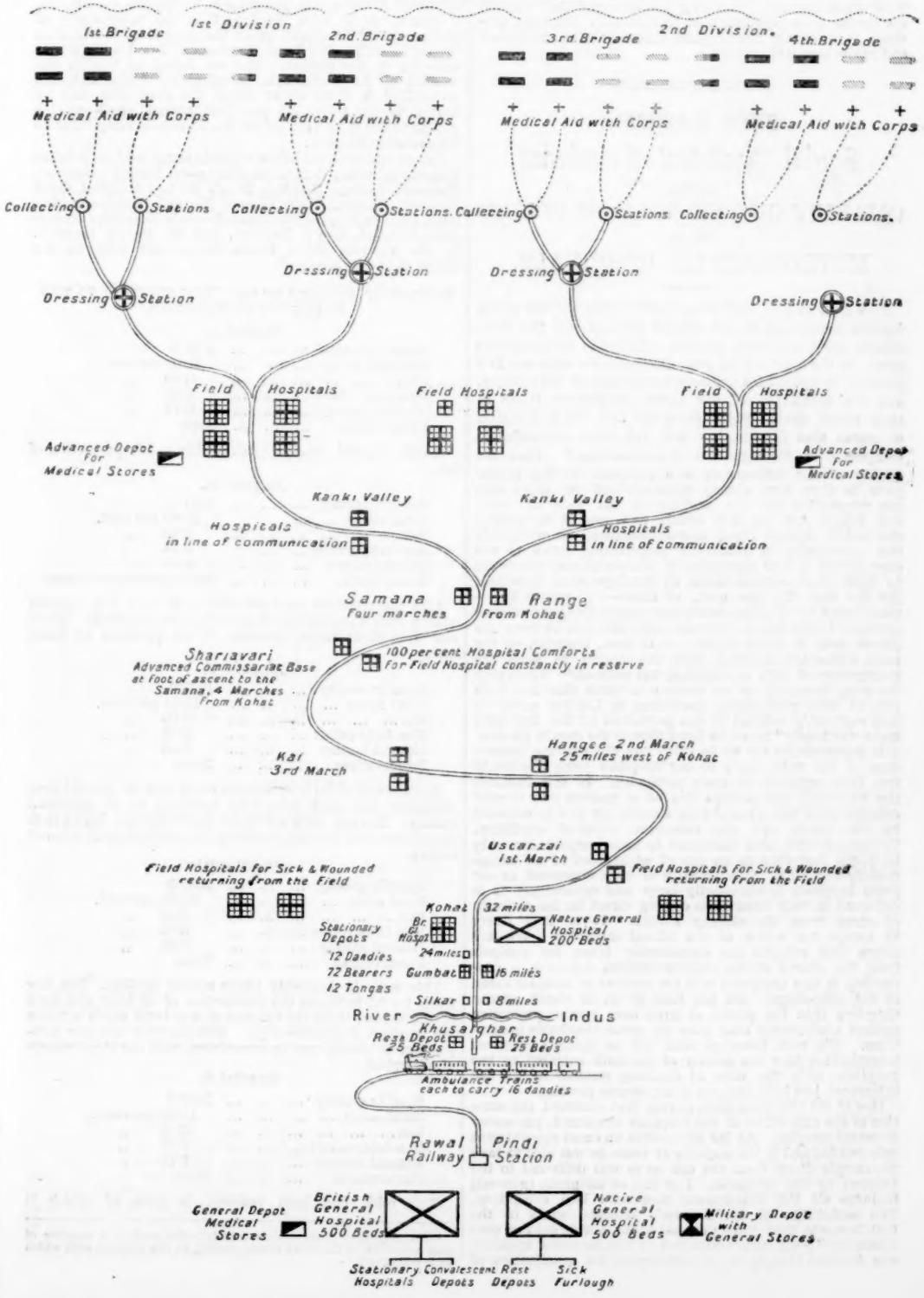
ESSENCE OF NATURAL WINTERGREEN AND ESSENCE OF ARTIFICIAL WINTERGREEN IN THE TREATMENT OF RHEUMATISM.

Mr. Vida writes that he has substituted since the month of July, 1896, the application of compresses soaked in essence of wintergreen for the ingestion of salicylate of soda in rheumatic patients whose digestive tubes and nervous systems it was important to consider. "I noted," he says, "at the onset in a certain number of patients some cutaneous manifestations varying from simple temporary erythema to the reappearing papulous eczema. In all the rheumatic patients the essence of wintergreen was applied according to the process become classic of 50 to 100 drops poured upon a double fold of aseptic gauze and covered by an impermeable material applied for some hours either to the forearm or to the leg and renewed twice every twenty-four hours. Surprised at these cutaneous accidents which manifested themselves, especially in a series, and which could not be imputed to an exaggerated susceptibility of the integuments of these patients, I sought for their cause and arrived at the following conclusions. There exist now in commerce two essences of wintergreen indifferently utilised in the drug business, and differentiated only by their price, varying from the single to the double. The one, the natural essence of wintergreen, is of a reddish yellow colour, having an oily odour, essentially extracted by distillation from the gaultheria procumbens or palommier, and is a mixture of hydrocarburets not yet perfectly defined and of methylic salicylate in the proportion of nine-tenths. The other, the artificial essence of wintergreen, is colourless, with an acrid odour, empyreumatic, recalling the odour of coal smoke, is pure methylic salicylate, and is obtained synthetically. On simultaneously applying to the two forearms of a rheumatic patient according to the method already described some compresses, the one soaked with the natural essence and the other with the artificial essence, it may be easily noticed that no reaction is produced upon the section of the member in contact with the pure methylic salicylate. The part treated with natural essence of wintergreen is, on the contrary, more or less red, painful, and covered sometimes with a rubeoliformic eruption. Methylic salicylate cannot have a different action according to the product employed. It is, then, necessary to conclude that the irritating action of natural essence of wintergreen is due to resins of an undetermined nature (gaultheriline, &c.) mixed with the salicylate. It is important, in order to avoid all irritating action appearing to counterbalance the excellent effects of this cutaneous medication to renounce the vague appellation of 'wintergreen,' which leaves to the preparer the choice of employing the natural or artificial essence, and often of mixing the two essences delivered by the producer and to prescribe the pure methylic salicylate deprived of all irritating action and not leaving any doubt upon the product to be employed."

THE MEDICAL ARRANGEMENTS FOR THE TIRAH EXPEDITIONARY FORCE.

THE accompanying diagram illustrative of the medical arrangements made for the main column of the Tirah expeditionary force will it is hoped prove interesting and instructive to medical officers of the army and volunteer forces and possibly to other members of the medical profession. It will serve to show the method adopted in modern warfare by which the fighting force in front is left to pursue its course untrammelled by sick and wounded, who are systematically relegated in the direction which they must take when found unfit for field service—viz., the rear. Under the conditions which obtained in the days of Wellington and during the Peninsular War, when the forces engaged were smaller and campaigns were conducted with less celerity and vigour and arms of precision with rifled quick-firing artillery had no existence, a very different system of army medical relief and hospital organisation existed. The corps-unit was then the basis of all organisation and every regiment and battery was in all respects complete in itself and was respectively provided with its separate hospital, stores, medical and surgical equipment and regimental staff of medical officers. The system of bearer columns, medical staff corps, first aid to wounded, and field hospitals as they now exist had not then been organised. The regimental hospital system was in force during the Crimean War and the siege of Sebastopol; the large attacking army represented a sedentary force which did not serve to bring out the defects incidental to this system. But the big wars of later years in America and the Franco-German and other campaigns in which very large bodies of men were engaged and everything depended upon rapidity of movement led to the inauguration of another system. The principles which have governed the organisation of the field medical service in India since the date of the last Afghan war have had the object of providing for the immediate requirements of the force and of relieving it of non-effectives, the systematic transfer of the sick and wounded from the field of operations to the hospitals at the base, and the apportionment of the medical establishments and equipment to the requirements of the force as a whole. It is sought nowadays to appropriate medical officers and establishments, stores and equipment, to positions in which they are most needed in actual warfare instead of to healthy men of regiments and batteries of Royal Artillery, and to disencumber the fighting columns in front of all unnecessary impedimenta. Briefly described the line of surgical and medical assistance for an army in the field, if traced from front to base, will be found to consist of (1) medical officers doing duty with corps; (2) bearer companies; (3) collecting and dressing stations; and (4) moveable field hospitals, stationary field hospitals on the lines of communication, general hospitals at the base of operations with attached military depôt and base medical store depôts, together with hospital ships where these are provided. With this clue to the scheme we do not apprehend

DIAGRAM ILLUSTRATING THE MEDICAL ARRANGEMENTS MADE FOR THE MAIN COLUMN OF THE TIRAH EXPEDITIONARY FORCE.



that any of our readers interested in the subject of field service will have any difficulty in deciphering the diagram of the arrangements that were planned and provided for the Tirah expeditionary force during the late operations against the border tribe population of that district. Separate provision is made for the hospital accommodation of British and native troops respectively.

THE LANCET
Special Analytical Commission
ON THE
QUALITY OF THE MILK SUPPLIED
TO THE
METROPOLITAN HOSPITALS.

THE high rate of milk adulteration in the first city of the world is maintained to the present day and still the State affords little assistance towards effectually reducing this rate. In the past official year (1896–97) the rate was 17·7 per cent. as against 9·1 per cent. for the rest of the country, and the authorities of the Local Government Board in their recent annual report remarked that "it is a matter of regret that London has not yet been successful in bringing down its high rate of adulteration." That the quality of the milk-supply is a reproach to the metropolis is thus very clearly acknowledged by those who are responsible for the working of the Sale of Food and Drugs Act, an Act which was framed to protect the public against fraud and adulteration. How quickly the opportunity is seized of perpetrating fraud in the case of milk is well illustrated in the recent results brought to light when samples taken on Sundays were examined. No less than 47½ per cent. of these—i.e., nearly half—were found to be adulterated, one sample being certified as skimmed to the extent of 90 per cent. and also to have had 23 per cent. of water added. "As soon, however, as the local authorities *seriously* took the matter in hand the Sunday rate of milk adulteration was reduced." The italics are ours, inasmuch as we venture to think that the high rate of milk adulteration prevailing in London could be very materially reduced if the provisions of the Act were more "seriously" taken in hand than is the case in general.

It is superfluous for us to point out the extreme importance of the milk-supply to our hospitals being absolutely free from reproach in every particular. In this instance the well-being and perhaps life of a patient may depend entirely upon this natural food because all else is unsuited to his needs and his enfeebled physical condition. To tamper with milk dedicated to such purpose can only be justly described as an act of wickedness of an exceptionally bad kind. The quantity of milk consumed at our great hospitals is necessarily large and accordingly it is delivered in bulk from carts coming direct in the majority of cases from the railway station. It is thus likely to escape the notice of the official inspector. We are aware that samples are occasionally taken for analysis from the churns at the railway station, but such a proceeding is rare compared with the number of samples taken at the milk-shops. On the face of it, it would appear therefore that the public at large have greater protection against adulteration than have our great charitable institutions. We have therefore been led to make a practical investigation into the quality of the milk supplied to the hospitals with the view of deciding whether or no the inferences just indicated are in any degree justified.

One of our Commissioners, having first obtained the sanction of the authorities of the hospitals concerned, proceeded to secure samples. As far as possible an exact appointment was avoided and in the majority of cases he was able to take the sample direct from the can as it was delivered to the hospital by the milkman. The list of hospitals (general) includes all the well-known ones with two exceptions. The authorities of St. Thomas's Hospital wrote in the first instance that "the proposal opens a wide field of consideration"; but at a committee of almoners the treasurer was directed to reply to us "relative to the examination of the milk-supply to this hospital being placed under County Council inspection," that "being satisfied with the milk supplied and our own course of inspection they hardly saw the advantage of the course you propose." We did not suggest, of course, as is here implied, that the milk-supply of London should be placed under the control of the London County Council. The Local Government Board is the proper authority in the matter. Also we failed to receive the sanction of the Westminster Hospital authorities although we applied to them at or about the same time that we applied to the rest. We therefore cannot speak of the quality of the milk supplied to St. Thomas's Hospital or to Westminster Hospital.

The results recorded below relate to samples of milk taken from the following general hospitals:—St. George's Hospital, University College Hospital, King's College Hospital, Great Northern Hospital, West London Hospital, Middlesex Hospital, London Hospital, St. Bartholomew's Hospital, Charing-cross Hospital, Guy's Hospital, and St. Mary's Hospital. In the analyses which follow the several hospitals are distinguished by a letter.[1]

RESULTS OF ANALYSIS OF THE MILK SUPPLIED TO THE METROPOLITAN HOSPITALS.

Hospital A.

Specific gravity	1032·0
Total solids	12·06 per cent.
Fat	3·50 ,,
Non-fatty solids	8·56 ,,
Mineral matter	0·70 ,,
Preservatives	None

A milk of good average quality with a fair proportion of fat.

Hospital B.

Specific gravity	1031·0
Total solids	11·95 per cent.
Fat	3·61 ,,
Non-fatty solids	8·34 ,,
Mineral matter	0·67 ,,
Preservatives	Small quantity of borax.

Like the previous specimen this milk is of fair average quality with a percentage of fat well above the limit. There was distinct evidence, however, of the presence of boric acid.

Hospital C.

Specific gravity	1031·0
Total solids	11·14 per cent.
Fat	3·02 ,,
Non-fatty solids	8·12 ,,
Mineral matter	0·64 ,,
Preservatives...	None

The amount of fat is within the mark, but on general consideration this milk cannot be regarded as of excellent quality. The non-fatty solids are decidedly low, which is in accordance with the comparatively low percentage of mineral matter.

Hospital D.

Specific gravity	1033·0
Total solids	10·80 per cent.
Fat	2·46 ,,
Non-fatty solids	8·34 ,,
Mineral matter	0·60 ,,
Preservatives	None

This milk is decidedly below normal quality. The low figure for fat indicates the abstraction of at least one-sixth of the cream, while the amount of non-fatty solids is below the standard of genuine milk. Milk showing this poor composition is clearly not in accordance with the requirements of a hospital.

Hospital E.

Specific gravity	1032·0
Total solids	11·90 per cent.
Fat	3·21 ,,
Non-fatty solids	8·69 ,,
Mineral matter	0·66 ,,
Preservatives	None

This milk had been scalded, in spite of which it

[1] We propose to communicate privately this week to a member of each hospital staff the letter corresponding to the hospital with which he is concerned.

showed a uniform composition. It is of good average quality and gave no evidence of preservatives.

Hospital F.

Specific gravity	1029·0
Total solids	10 55 per cent.
Fat	2·91 ,,
Non-fats	7 64 ,,
Mineral matter	0·70 ,,
Preservatives	None

This milk is of decidedly inferior quality. Some preliminary indication of this was afforded by the comparatively low specific gravity. The fat again is just below the minimum and the amount of non-fatty solids suggests attenuation. The milk yielded a beautiful mauve pink colour on heating with hydrochloric acid which may be due possibly to proteids or perhaps to foreign colouring matter. This reaction was at any rate not obtained with any other of the milks examined.

Hospital G.

Specific gravity	1032 0
Total solids	11 51 per cent.
Fat	3·05 ,,
Non-fats	8·46 ,,
Mineral matter	0·65 ,,
Preservatives	Boric acid in slight but distinct quantity

The composition of this milk borders closely upon the limits of what may be regarded as genuine milk. It cannot be described as a rich milk. Distinct evidence of boric acid was obtained.

Hospital H.

Specific gravity	1032·0
Total solids	11 82 per cent.
Fat	3·30 ,,
Non-fatty solids	8 52 ,,
Mineral matter	0·71 ,,
Preservatives	None

A good average specimen of milk with a satisfactory proportion of fat and free from preservatives.

Hospital I.

Specific gravity	1033 0
Total solids	12·03 per cent.
Fat	3 47 ,,
Non-fatty solids	8 56 ,,
Mineral matter	0·71 ,,
Preservatives	None

A milk of good quality with satisfactory proportion of fat and no preservatives.

Hospital J.

Specific gravity	1032 0
Total solids	11·95 per cent.
Fat	3 43 ,,
Non-fatty solids	8 52 ,,
Mineral matter	0 67 ,,
Preservatives	None

Like the previous specimen this milk is of good quality with a satisfactory proportion of fat and free from preservatives.

Hospital K.

Specific gravity	1032·0
Total solids	11·41 per cent.
Fat	3 00 ,,
Non-fatty solids	8 41 ,,
Mineral matter	0·71 ,,
Preservatives	Boric acid in distinct quantity

This is a milk of fair average quality, the amount of fat being, however, close upon the minimum of genuine milk. The milk contained boric acid but not in excessive quantity.

The results may be summed up shortly as follows. Of the eleven samples examined we regard seven as of good average quality, two as of indifferent quality, and two as decidedly poor and in all probability diluted. These conclusions are based upon the standards adopted by the Society of Public Analysts, which seem to us to be perfectly justifiable on the grounds of common experience. For fat the limit adopted is 3 0 per cent., for non-fatty solids it is 8·5 per cent. Three specimens contained distinct though, be it remarked, not excessive quantities of boric acid.

It is pretty safe to assert that had the samples been taken in the summer months the number of specimens borated and the amount of boric acid used would have been greater. Whatever may be the views taken as to the employment of preservatives in food for general purposes, their addition to the milk-supply to hospitals each and all will agree is very objectionable and should be vigorously protested against. A great injury may thereby be unwittingly done to invalids and children and especially to patients who suffer from enfeebled digestive functions or in whom disturbance is easily set up at any point along the alimentary tract.

It is interesting to observe that in this inquiry, which was necessarily limited in scope, the percentage number of samples which we think deserve rejection is 18 2 against 17·7 per cent., the rate of milk adulteration in London as brought to light in the returns of the Sale of Food and Drugs Act. We may add, however, that on the whole we have, we think, placed a somewhat liberal construction upon the results. But they have at least established the important fact that the milk supplied to London hospitals is no better—not to say worse—than that supplied to the public, whereas for hospital purposes it should be absolutely beyond reproach. It matters comparatively little whether the milk we add to our tea is watered or deficient in cream, but in the hospital this may mean depriving the patient of his only means of nourishment, while to add chemical preservatives to the same milk should be counted a distinct offence in such a case. The public to some extent are protected against fraud and adulteration by the Sale of Food and Drugs Act, but our great charitable institutions, which receive milk in large quantities, do not share it is evident in the same measure in this protection, although they are in much greater need of it. We trust that the Government will strengthen the hands of the officials appointed to take samples under the Act that they may be empowered to take samples at frequent intervals from the cans of the milkman as soon as they are set down at the hospital, both in the case of the morning and the afternoon supply. This would relieve the hospital authorities, as we think they should be relieved, from all anxiety, responsibility, and expense in the matter and would secure a milk-supply fully in accordance with hospital requirements. In many of the hospitals, but not in all, a system of control is adopted, but this is generally limited to observing the amount of cream by a "creamometer" and the specific gravity by a hydrometer. This is no doubt useful, but it is not sufficient since the volume of cream is not found to bear a constant relation to the fat, on the amount of which depends a very important quality. The fat of a milk may be below 3 per cent. and yet it is possible for that milk to show a volume of cream equal to 10 per cent. The quality of milk may to some extent be controlled in this way, but the presence of chemical preservatives would be lost sight of.

Everyone must admit the necessity of a pure and unadulterated supply of milk to the sick and debilitated. That such a supply is not universal is evident to us in the present inquiry as well as from the testimony of hospital physicians who have been in communication with us upon the subject. There is, we fear, some tendency on the part of administrative authorities to decide upon buying milk for hospitals at the lowest possible price and milk of the lowest possible quality is accordingly supplied. A fair price should be paid, and a pure, unimpoverished article of excellent quality may then justly be demanded.

MR. J. A. PICTON AND VACCINATION.

MR. J. ALLANSON PICTON, ex-M.P., has become an anti-vaccinationist. By most people this announcement will be read with the same kind of surprise as would fill them if they were told that Lord Salisbury had become a Conservative or Mr. Healy a Home Ruler. But the statement is not published as a new joke. It is made with every outward evidence of seriousness by the organ of the league in the following words: "We are sure all our friends will be glad to learn that Mr. J. A. Picton, of the Vaccination Commission, and formerly member for Leicester, has formally notified his adherence to the anti-vaccination cause and has joined the National League." Mr. Picton's relationship to anti-vaccination has for some time been a very curious one and merits at least a passing notice.

In the *Times* of Nov. 4th he wrote thus regarding his membership of the Royal Commission: "I declare that I entered on the inquiry with a belief in Jenner's alleged discovery. It was the evidence laid before the Commission and that alone which after seven years' study of it convinced me that as a prevention of small-pox vaccination is absolutely futile." There are here two main declarations—first, that Mr. Picton was a believer in vaccination when the Commission began; and, second, that he was a disbeliever when the Commission closed, his disbelief being solely due to the evidence he had heard.

The first assertion was traversed without delay by two correspondents in the *Times*. One, signing himself "M.D.," pointed out that in 1889 in the *Contemporary Review* Mr. Picton had said that he was "rapidly approaching" the conclusion that "vaccination is of no use." The other letter, by Dr. John C. McVail, was partly as follows:—

> "Referring to the inquiry by the Royal Commission of which Mr. Picton was a member he says: 'I declare that I entered on the inquiry with a belief in Jenner's alleged discovery.'—(The *Times*, Nov. 4th, 1897.)
>
> "In moving for the appointment of a Royal Commission in the House of Commons on April 5th, 1889, Mr. Picton is reported thus: 'In fact, he believed vaccination to be just as ineffective as baptism.'—(The *Times*' Parliamentary Reports for April 5th, 1889.
>
> "Further, in the *Contemporary Review* for January, 1889, referring to the view 'that vaccination is of no use,' Mr. Picton wrote: 'I am rapidly approaching that conclusion myself.' Thus in January, 1889, Mr. Picton was rapidly approaching the conclusion that vaccination is of no use; by April he had definitely arrived at that conclusion; in May he was appointed a member of the Royal Commission on Vaccination; and now he declares that he entered on the inquiry with a belief in vaccination."

Mr. Picton appears to have thought it not inconsistent with his reputation to allow these letters to remain unanswered. That is primarily his own affair and so far as believers in vaccination are concerned the position in which the point is left by his silence is perfectly satisfactory. Out of his own mouth and from his own pen he stands convicted of declaring with regard to his own opinions in 1889 not merely what is inconsistent with fact but what is diametrically opposed to fact.

His attitude towards the vaccination laws in the earliest months of the Commission's inquiry is easily seen in the minutes of evidence. In July, 1889, in cross-examination of Sir Richard (then Dr.) Thorne, Mr. Picton said (Q. 943), "My point (and I make no concealment of it) is that if you follow the line of official vaccinations and follow the line of the growth or decrease of small-pox you find that as the official vaccinations increase small-pox increases and as the official vaccinations decrease small-pox decreases. ....." In the course of the next question he says, "My point is that the operation of the vaccination laws does not decrease small-pox."

All this bears on the question of Mr. Picton's opinions in 1889, but it seems to us that the reply to his letter in the *Times* may be carried a good deal further. After "declaring" that he "entered on the inquiry with a belief in Jenner's alleged discovery" he continues as above quoted: "It was the evidence laid before the Commission and that alone which after seven years' study of it convinced me that as a preventive of small-pox vaccination is absolutely futile." Seeing that, notwithstanding his own declaration to the contrary, it is proved that in 1889 he was already convinced that vaccination is as useless as baptism, it is obvious that this conviction did not rest on evidence which at that time he had never heard. That, however, is not all. We are strongly of opinion that Mr. Picton has in the *Times* misstated the opinions which he held at the end of the inquiry almost as seriously as he has misstated the opinions which he held at the beginning of the inquiry. With regard to his later views there is of course no such direct evidence of misstatement as with regard to his earlier views. Here we must proceed partly by inference. His conclusions regarding vaccination are set forth at great length in the "Statement by Dr. Collins and Mr. Picton of the Grounds of their Dissent from the Commission's Report." In the first paragraph they write: "..... it is necessary to review in some detail the history of small-pox and the various preventive measures which have at different times been in vogue and to scrutinise the grounds on which one alone of these preventive measures has been relied upon to the exclusion of others. We desire also to give reasons for thinking that other more effective and practicable (as well as less objectionable) modes of stamping out small-pox or protecting communities from its introduction are available. We venture to think that the report of our colleagues, in the preparation of many portions of which we have borne our part, has approached the consideration of the behaviour of small-pox and the means of preventing it too exclusively from the standpoint of vaccination ....." Unless the English language has lost its meaning there is no getting over the fact that vaccination is here acknowledged to be an "effective" and "practicable" mode of stamping out small-pox or protecting against its introduction. The note which characterises this introduction to the dissentients' Statement is not wanting in what follows. In Section 185 Dr. Collins and Mr. Picton say, referring to vaccinal risks, that vaccination should not be compulsory "even if its value were greater than it is." In Section 82 they say: "We are unable, therefore, to infer from the statistics of the London small-pox hospital that vaccination has any very marked effect in reducing the liability to attack by small-pox. ....." Sections 90, 93, and 101 might also be quoted, but we content ourselves with giving the first sentence of Section 113: "A relatively low fatality rate in vaccinated children under ten is, as shown in the report, a remarkable feature in recent epidemics, and this, if it were constant, might well be urged as a ground for encouraging the practice of infant vaccination when small-pox is prevalent, if no other means for controlling the disease were available." Surely all this is not the language of a man who had been "convinced" by "seven years' study" that "vaccination is absolutely futile." The two positions taken up by Mr. Picton, first in the Statement of Dissent and second in the *Times* are in effect about as contradictory as his speech in the House of Commons in 1889 is to his declaration in the *Times* in 1897.

But the question of Mr. Picton's opinions may be argued from another standpoint. Leaving his belief as to the value of vaccination, let us turn to his belief as to the dangers of vaccination. Here are a few quotations. "We are deeply impressed with the sad cases of severe illness and suffering and death ..... We are also struck with the fact that under the circumstances which must obtain in the houses of the poor additional risks to health and life are encountered and that the operation cannot be regarded as free from even the more avoidable risks except under conditions and precautions it is perfectly impossible to secure." (Section 185). "The evidence leads us to believe that vaccine lymph or the vaccine process is not infrequently proximately related to erysipelas, inflamed arms, ulceration, sloughing and axillary abscess" (Section 198). "Not only is the danger of vaccine syphilis now admitted to be 'real and very important,' but the safeguards which have been laid so much stress upon are now known to be illusory" (Section 208); and "we are bound to conclude that it is possible in the act of vaccination to convey any disease whose cause can reside in the inflammatory lymph of a vaccine vesicle" (Section 220). Vaccination, therefore, in the opinion of Mr. Picton is a very dangerous proceeding. If any sane man holds these views and at the same time holds that "vaccination is absolutely futile" it is surely impossible that he can for one moment suggest that the State shall continue to provide vaccination and vaccinators for all and sundry who choose to avail themselves of the provision either for themselves or for their children. Yet this is exactly what Mr. Picton and his colleague advise. Having urged the abolition of compulsion and the adoption of further precautions against attendant risks the dissentients "suggest that in other respects the law should be left as it is" and that "all machinery" be "left intact" so that "vaccination would continue to be provided as at present for those who desire to avail themselves of it." Nothing but a belief in vaccination can reasonably account for such advice seriously given to Her Majesty and Parliament. The case is all the stronger in the fact that at the same time Mr. Picton declares that he believes other means—sanitation and the like—to be effective against small-pox. In short, we hold it proved that in the *Times* not only has Mr. Picton misstated his opinions of 1889 but also his opinions of 1897. He declares that when the Commission began he believed in vaccination and that when the Commission ended he disbelieved in vaccination. His own statements, oral and written, show on the contrary that he disbelieved in vaccination when he joined the Commission and that he believed in it when he signed the Statement from which we have quoted.

In the face of his own recommendation that vaccination should continue to be provided as at present Mr. Picton has now become a member of a league whose objects include

"the entire repeal of the Vaccination Acts" and "the disestablishment and disendowment of the practice of vaccination." In other words, he has engaged to do his best or his worst to ensure the rejection of his own deliberate recommendation to Queen and Parliament. It is possible to gather from the organ of the league the excuse that is to be made for this astounding attitude. "We trust," says the *Inquirer*, "his example may be followed by many other men of position who may have hitherto held aloof in the idea that the doctors and the doctors' friends would have loyally accepted at least the conclusions and advice of their own packed Commission and who are revolted at the strength of the persecuting spirit whereby that idea has been falsified. If so—and we have little doubt that it will be so—the existence and tactics of the Jenner Society will have done unexpected good." This helps to throw light on the concluding passage in Mr. Picton's letter to the *Times*, in which, after saying that he has never yet been a member of an anti-vaccination society, he adds that "if any attempt at a more rigorous enforcement of the law is made in the face of the Commission's recommendations I suspect I shall only be one unit amongst hundreds of thousands, as many of them believers as disbelievers in vaccination, who will help to resist a cruel and monstrous tyranny." It almost seems as if when he wrote the letter he was preparing himself and those of the public who may take any interest in his doings for the *volte-face* he was about to perform. And if his declaration had been allowed to go unchallenged—that he believed in vaccination in 1889 and disbelieved in it after hearing seven years' evidence—it is obvious that his joining the League could have been advertised as the formal sealing of the conversion which had taken place. We have seen, however, that the facts are just the reverse and even the *Inquirer* remains silent regarding the declaration in the *Times*.

A curious intolerance characterises this latest vagary of the ex-M.P. for Leicester. The Commission's recommendations may be taken as standing midway between those of Mr. Picton on the one hand and those of the Jenner society, as represented by its secretary, on the other. Briefly, the Commission desires in its report that the State should continue to use pressure in favour of primary vaccination, but that a declaration of conscientious objection should be accepted under proper conditions. Mr. Picton in his dissent desires that the State should continue to provide vaccination, but should not use pressure. The Jenner Society desires that pressure should be applied both as to vaccination and re-vaccination. Mr. Picton's dissent came first, and for it he was lauded to the skies by anti-vaccinationists. The Jenner Society's dissent came next, but it was in the opposite direction. How it has been received by Mr. Picton and the *Inquirer* we see in the passages above quoted. The right of dissent is to be confined to Mr. Picton and his friends. Their example is not to be followed excepting on the same side, and if Dr. Bond and his friends take any step in the opposite direction it is to be denounced in unmeasured terms. In the case of Mr. Picton dissent does not amount even to "a choleric word," but in the mouth of Dr. Bond it is to be counted as "rank blasphemy."

We have said that Mr. Picton's silence in face of the exposure of his misstatement in the *Times* is of primary concern to himself alone. Secondarily, however, it is of interest to the society with which he is now formally associating himself. And here we must not be misunderstood. Not for one instant do we suggest that Mr. Picton should be expelled from the league of anti-vaccination. On the contrary, he should be heartily welcomed. He has fully qualified himself for its membership, and no qualifications could have been more appropriate than misstatement and intolerance. Even on this subject of his own belief Mr. Picton is not breaking new ground in the way of erroneous assertion. The official organ of the society has been before him. In October, 1896, it asserted "that Mr. Picton entered the Commission a believer in this same power" of vaccination. There is, indeed, a curious resemblance between the line taken by the *Inquirer* and that followed by Mr. Picton, for the *Inquirer* made this statement notwithstanding the fact that it had quoted in its own columns Mr. Picton's previous statement in the *Contemporary Review* that he was rapidly approaching the belief "that vaccination is of no use." It had gone further, for before Mr. Picton's article had appeared in the *Contemporary Review* the *Inquirer* in the course of its advocacy of the appointment of a Royal Commission, wrote thus: "An able member of Parliament, who is opposed to compulsory vaccination and has no faith in the practice itself, has promised to move the House if he can obtain promises of adequate support." The member who "moved the House" was Mr. Picton.[1]

It is obviously most appropriate that he should now formally ally himself with a crusade the official organ of which had not only preceded him in misstatement but had done so even whilst its own pages furnished the refutation of its own assertion. Mr. Picton's letter to the *Times* may indeed be looked upon as equivalent to the test which aspirants to knightly honours had to undergo in days of old—the lonely vigil beside the armour which was afterwards to be donned by the crusader. The weapons are well known in the anti-vaccination camp, and Mr. Picton should be welcomed as a brother in arms or even a leader in a warfare which, if it were successful, would spread death and devastation in many an English household.

THE BATTLE OF THE CLUBS.[2]

THE EMPIRE MUTUAL SICKNESS, ACCIDENT AND GENERAL ASSURANCE ASSOCIATION, LIMITED.

THE association with the above florid title is evidently one of those that, like humble Allen, try to "do good by stealth and blush to find it fame." It has sent certainly to one medical man and probably to a great many more a circular marked "private and confidential" offering them the option of becoming local directors by taking £50 debentures. The circular proceeds: "We are offering them in the first instance to medical men and those who apply we intend to appoint our sole medical examiners for a district convenient to them and in addition to the examination fees they will receive 5 per cent. interest on the amount they have paid up besides bonuses; by doing this each appointment will be a really valuable one." In addition to this the management "propose to issue a printed booklet of boards of reference mentioning each local director therein and causing them to be widely known. Should you be desirous of acting as our sole medical examiner and local director in your district on the conditions named I shall be glad to have your application on the accompanying form. Should it be inconvenient to you to subscribe for fifty debenture shares the directors will be prepared to consider application for a smaller number.—I am, yours faithfully, H. Ludlow Croft, Managing Director."

In our opinion the sending of such a circular to medical men is totally unjustifiable. The medical examiner to an insurance society should certainly not have a direct pecuniary interest in such society and nothing more need be said as to the proposal to advertise the names of such medical men by means of a "printed booklet." The association, we may add, hails from Nottingham.

MEDICAL AID ASSOCIATIONS AT MANCHESTER.

Manchester is waging war apparently against a very army of medical aid associations. A new one we gather from the local papers has recently been started by the minister of Cavendish Chapel. We have not seen his official circular, but from sundry passages quoted we see that "persons of any station in life and of any age from two to sixty years" are to be eligible as members. Thus there is no wage limit. On the other hand Mr. Leach, in a letter written by himself, says "the directors agreed to give a minimum fee of 4*s*. per annum per member to the medical man and this was not to include midwifery operations or chronic cases. For all these the medical officer was free to charge his own fees." It seems to us that the absence of a wage-limit is a fault which cannot be set aside. If the principle of "collective bargaining" for which Mr. Leach pleads is such a panacea for evils let us have it all round. Why should not everyone pay 4*s*. a year to plumbers, gas-fitters, slaters, carpenters, and others, the payment of such a sum making it justifiable to have them out of bed at all hours of

[1] THE LANCET, Nov. 14th, 1896, p. 1404.

[2] A reprint of the previous articles on the above subject has been published in book form entitled, "The Battle of the Clubs," and can be obtained from THE LANCET Office, price 1*s*.

the night or summon them on Sundays or Bank Holidays to put right some real or fancied defect? Or why should not a medical man make it a principle to begin an operation and then go away for an hour or so to fetch an instrument or some ointment, "man's time" to be duly charged for? Plumbers and gas-fitters very often do this. To be serious, though, we do not consider that one penny per week is sufficient although the Medical Guild of Manchester are said to have fixed this as the minimum. As Dr. Sawers Scott writes: "While a man is willing to give in the sacred name of charity he calls by another name the demand of the 'sturdy beggar' who presents the pistol of 'public opinion' at his head."

With reference to the National Deposit Friendly Society, concerning which, as noted in our issue of Dec. 11th, the Medical Guild issued a pronouncement, it is true that there is no wage limit, but it seems to us that this society is to be commended for one thing. Its members have to pay in monthly to the sick fund the amount they wish to draw daily as sick pay. This must be not less than 6*d.* and not more than 10*s.* The fees paid are as follows: one visit with medicine for two days 2*s.* 6*d.*; members entitled to over 5*s.* daily sick pay for every 1*s.* above 5*s.* extra per visit 6*d.* So that in the case of a member drawing 6*s.* daily sick pay his medical man would receive 3*s.* per visit, and so on in proportion. This is in our opinion a good rule, but of course the main objection still stands. There is no wage limit and therefore nothing to prevent a well-to-do but miserly individual from joining the society, paying up for 5*s.* a week sick pay and getting medical attendance at 2*s.* 6*d.* per visit. A wage limit is an absolute necessity.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 5424 births and 3730 deaths were registered during the week ending Saturday last, Dec. 25th, 1897. The annual rate of mortality in these towns which had been 20·8 and 20·6 per 1000 in the two preceding weeks further declined last week to 17·7. In London the rate was 18·2 per 1000, while it averaged 17·4 in the thirty-two provincial towns. The lowest rates in these towns were 9·0 in Croydon, 10·7 in Brighton, 11·8 in Oldham, and 13·6 in Derby; the highest rates were 19·8 in Manchester, 19·9 in Nottingham, in Preston, and in Sheffield, 25·8 in Blackburn, and 26·5 in Swansea. The 3730 deaths included 480 which were referred to the principal zymotic diseases, against 552 and 561 in the two preceding weeks; of these, 199 resulted from measles, 102 from whooping-cough, 39 from diphtheria, 33 from "fever" (principally enteric), 30 from scarlet fever, 27 from diarrhœa, and not one from small-pox. The lowest death-rates from these diseases were recorded in Portsmouth, Norwich, Bolton, and Gateshead; while they caused the highest rates in Swansea, Leicester, Cardiff, and Blackburn. The greatest mortality from measles occurred in London, Brighton, Barnsley, Halifax, Swansea, Bristol, and Blackburn; from scarlet fever in Huddersfield and Swansea; from whooping-cough in Gateshead and Plymouth; and from "fever" in Derby. The 39 deaths from diphtheria included 56 in London, 6 in Cardiff, 6 in Leicester, and 4 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 3619, against 3818, 3812, and 3806 on the three preceding Saturdays; 222 new cases were admitted during the week, against 323, 319, and 280 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London which had been 463 and 457 in the two preceding weeks further declined to 352 last week, and were 128 below the corrected average. The causes of 54, or 1·5 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Leeds, Newcastle-upon-Tyne, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Preston, Bradford, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns which had increased in the five preceding weeks from 18·5 to 20·3 per 1000 declined again to 18·6 during the week ending Dec. 25th, 1897, but was 0·9 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·8 in Leith and 15·8 in Aberdeen, to 19·6 in Paisley and 20·7 in Glasgow. The 554 deaths in these towns included 26 which were referred to whooping-cough, 11 to measles, 10 to diarrhœa, 9 to scarlet fever, 5 to diphtheria, and 4 to "fever." In all, 65 deaths resulted from these principal zymotic diseases, against 76 and 72 in the two preceding weeks. These 65 deaths were equal to an annual rate of 2·2 per 1000, which was slightly below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough which had been 20 and 29 in the two preceding weeks declined to 26 last week, of which 19 occurred in Glasgow. The 11 deaths referred to measles corresponded with the number in the preceding week and included 8 in Glasgow and 3 in Greenock. The fatal cases of scarlet fever which had been 12 and 10 in the two preceding weeks further declined to 9 last week, of which 6 were recorded in Glasgow and 3 in Dundee. The 5 deaths referred to diphtheria exceeded by 2 the number recorded in the preceding week and included 2 in Glasgow and 2 in Edinburgh. The 4 fatal cases of "fever" showed a slight further decline from recent weekly numbers, and included 3 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 129 and 138 in the two preceding weeks, further rose to 149 last week, but were 28 above the number in the corresponding period of last year. The causes of 44, or nearly 8 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin which had increased in the three preceding weeks from 25·4 to 28·5 per 1000 declined again to 21·8 during the week ending Dec. 25th, 1897. During the past twelve weeks of the current quarter the death-rate in the city has averaged 23·9 per 1000, the rate during the same period being 18·8 in London and 18·8 in Edinburgh. The 146 deaths registered in Dublin during the week under notice showed a decline of 45 from the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against 15 and 19 in the two preceding weeks; of these, 5 resulted from "fever," 4 from diarrhœa, 3 from scarlet fever, 1 from diphtheria, and not one either from small-pox, measles, or whooping-cough. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 2·9 in London and 0·9 in Edinburgh. The deaths referred to different forms of "fever" which had been 7 and 10 in the two preceding weeks declined to 5 last week. The 4 fatal cases of diarrhœa exceeded the number recorded in any recent week. The deaths from scarlet fever which had been 4 in each of the two preceding weeks, declined to 3 last week. The 146 deaths in Dublin last week included 22 of infants under one year of age and 44 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a decline from the numbers recorded in the preceding week. Four inquest cases and 4 deaths from violence were registered, and 41, or more than a fourth, of the deaths occurred in public institutions. The causes of 12, or more than 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

FLEET-SURGEON GEORGE BELL MURRAY has been placed on the Retired List, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments have been notified:—Fleet-Surgeons: G. D. Twigg to the *Flora*, and R. G. Brown to the *Clyde*. Staff-Surgeons: E. C. Wood to the *Mersey*, and A. M. French to the *Cæsar*. Surgeons: J. C. Wood to the *Vivid*, additional; A. A. J. McNabb, M.B., to the

Northampton, additional for Curacoa; E. J. Miller, M.B., to the *Flora*; W. E. Mathew to the *Repulse*; J. E. H. Phillips to the *Cæsar*; and W. M. Keith, M.B., to the *Prince George*.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel Anthony L. Brown is placed on retired pay. Surgeon-Lieutenant-Colonel Scott is appointed to the medical charge of troops at Yarmouth. Surgeon-Major E. L. Maunsell has left Woolwich for India.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain Thomson, A.M.S., is appointed to officiate as a Civil Surgeon, second class, and to be posted to the Etawah district. Brigade-Surgeon-Lieutenant-Colonel Condon (Retired List) is appointed to be Special Health Officer, Cawnpore. Dr. E. C. Pettifer is appointed to be Special Health Officer, Fyzabad and Ajudhya. Surgeon-Lieutenant-Colonel Gordon Price (Bengal), Civil Surgeon, Murshidabad, and Surgeon-Lieutenant-Colonel Henry Adey (Bombay), 10th Regiment of Bombay (Light) Infantry, retire from the service subject to Her Majesty's approval.

The following promotions and retirements have been Gazetted:—To be Surgeon-Major-General: Surgeon-Colonel George Bainbridge, Bombay Establishment. To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel George Hutcheson, Bengal Establishment. Surgeon-Majors to be Surgeon-Lieutenant-Colonels: *Bengal Establishment:* Samuel John Thomson, Robert Neil Campbell, Edward Salisbury Brander, Fakir Chundra Chatterjie, and George Augustus Emerson. *Madras Establishment:* Charles Henry Bennett, William Henry Thornhill, and Maneckjee Eduljee Reporter. *Bombay Establishment:* Alfred William Frederick Street, D.S.O., Henry Pruce Jervis, David Charles Davidson, James Charles Harding Peacocke, and Kaikhosro Sorabji Nariman. Surgeon-Captains to be Surgeon-Majors: *Bengal Establishment:* Henry Robert Woolbert, George Henry Baker, Thomas Grainger, M.D., Joseph Rosamond Adie, Arthur Charles Younan, Alfred William Alcock, and John Macfarlane Cadell. The retirement of the under-mentioned officers have received the Queen's approval: Surgeon-Lieutenant-Colonel Arthur Tomes, Bengal Establishment, and Surgeon-Major Framji Ruttonji Divecha, Madras Establishment.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant T. W. G. Kelly, M.D., to be Surgeon-Captain; Surgeon-Lieutenant John Edward O'Connor, M.B., from 1st Volunteer Battalion Leicestershire Regiment, to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Engineers: 2nd Gloucestershire (Bristol): Surgeon-Captain J. M. Thomas resigns his commission. *Rifle:* 1st Volunteer Battalion Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant W. H. R. Forsbrook, M.D., resigns his commission. 1st Volunteer Battalion Royal Scots Fusiliers: William Maccall Boyd, M.B., to be Surgeon-Lieutenant. 1st Volunteer Battalion the Northamptonshire Regiment: Surgeon-Lieutenant E. P. Dickin, M.D., to be Surgeon-Captain. 1st (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Charles McBryde, M.B., to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

Manchester Companies: Surgeon-Captain W. H. B. Crockwell resigns his commission.

PRESENTATION OF CHITRAL MEDALS AT MALTA.

On Dec. 8th His Excellency the Governor of Malta presented the Chitral Medals to Captain Baillie and the non-commissioned officers and men of the Seaforth Highlanders who took part in the expedition in 1895 for the Relief of Chitral and the operations in the Swat Valley. Among those present were Colonel Murray, C.B., in command of the troops, Major-Generals Lord Congleton and Owen Rear Admiral Harris, Surgeon-Major-General Maunsell, C.B. (who himself took a prominent and distinguished part in the campaign), Colonel Wynne, C.B., Colonel Wood, C.B., and a number of other staff officers. Lady Freemantle, Lady Congleton, Mrs. Maunsell, and Mrs. Murray pinned the medals upon the breasts of the recipients. It would be interesting to know why the name of Mrs. Maunsell was omitted from the telegrams announcing the ceremony which appeared in at least two of our prominent London daily papers.

THE SOUDAN.

The transfer of Kassala from the Italians to the Egyptian Government has taken place and the Egyptian flag has been substituted for that of the Italians. Kassala has an elevated position, is some 250 miles from the Nile valley, and is a place of considerable trade. Its possession gives Egypt a sanitary station of some stategical value and from a trading point of view is of much importance and capable of future development, especially when railway communication has been established between it and the Nile. As regards the intended expedition to Khartoum there is every reason to believe that it will start towards the end of the summer of this year and that a considerable addition of British troops will be made to the Egyptian expeditionary forces beforehand. This will also necessitate, of course, the presence of a number of officers of the medical staff and an increased hospital service to take part in the expedition.

RETIREMENTS IN 1898.

The Army Medical Department retirements in 1898 will be: Surgeon-Major-General J. B Hamilton, M.D., Oct. 3rd; Surgeon-Major-General A. A. Gore, M.D., Dec. 1st; Surgeon-Colonel F. B. Scott, M.D., C.M.G., Dec. 9th; Brigade-Surgeon-Lieutenant-Colonel A. Anderson, Oct. 1st; Brigade-Surgeon-Lieutenant-Colonel R. H. Robinson, Oct. 16th; and Brigade-Surgeon-Lieutenant-Colonel J. F. Supple, Dec. 14th.

THE PLAGUE IN INDIA.

Medical officers and others are still having a great deal of hard work in connexion with plague duty. The epidemic shows as yet no signs of terminating. The disease is still prevalent in Bombay, at Poona (where it is very bad), at Sholapore, in the Punjab, and in Sind.

As was announced in another column last week, Mr. Arthur Trehern Norton, F.R.C.S. Eng., Surgeon-Lieutenant-Colonel, Volunteer Medical Staff Corps, has been appointed by Her Majesty a Companion of the Bath.

Correspondence.

"Audi alteram partem."

"THE COMPARATIVELY STATIONARY DEATH-RATE IN PRIVATE OBSTETRIC PRACTICE."

To the Editors of THE LANCET.

SIRS,—"M. D." in THE LANCET of Dec. 18th, 1897, undoubtedly enlightens us as to some of the causes of the stationary death-rate in private obstetric practice as compared with that in the maternity hospitals. We in the country have very much more to put up with if we decide to become the pioneers of aseptic midwifery than have our more favoured brethren of the towns. In the first place we commonly meet with patients who, backed up by the local "Gamp," persist in refusing to take off their ordinary work-a-day habiliments whilst being delivered; neither entreaty nor invective seems to have the slightest effect in inducing them to divest themselves of their septic skirts, petticoats, boots, stockings, &c. More often than not no enema is administered prior to the passage of the presenting part over the perineum, and when the untrained attendant is "cleaning" (?) the patient after delivery fæces and other dirt are wiped right into the vagina. When the temperature goes up if the medical attendant says that the womb must be washed out again the "Gamp" steps in and suggests that "Mr. Blank never does anything of that kind and that he is a very lucky man with his patients." The patient gets worse, rigor succeeds rigor, the thermometer shows the existence of septic infection, still does the "Gamp" shriek, "It is only the milk going all over her," and when at last the vital forces succumb to the overwhelming power of legions of pathogenic micro-organisms and their ptomaines, can it be believed that medical men can be found who will certify that the patient has died from "*lacteal fever*"?

Yet such, alas, is the case. I have with my own eyes seen a certificate in which the cause of death was assigned to such a hypothetical disease. Can one then marvel why it

is that aseptic midwifery does not make due headway in rural districts? The very existence of puerperal septicæmia is called into question by those who are supposed, in such matters at least, to be the instructors of the laity. The ancient customs of untrained and self-styled midwives, no matter how filthy or how prejudicial to the health of the patient, are allowed to go on without rebuke for fear perhaps lest those dames should speak badly of the accoucheur and thus damage his future prospect of midwifery practice. There is undoubtedly a strong temptation in the way of the young obstetrician to let things go on in "the bad old way." He sees his elder colleagues doing a large practice on the ancient lines, with perhaps a death-rate of 5 per cent., but then the patients, poor things, "died in child-birth," so that no stigma is attached to the attendant. He knows that if he endeavours to adopt rigid principles of asepsis he will be termed "fussy," if not ignorant, and that if he trys to show the nurse (in 90 cases out of 100 altogether without training) any of the modern methods of conducting a normal labour she will tell him that she has attended as many confinements as he has and that she has never done and never shall do any of "them there new-fangled things." The reformer, it is said, never reaps the benefit of his work and the saying holds quite as good with regard to the obstetric reformer as it does to pioneers of reform on any other social abuse. So that if the young practitioner in the country decides to adopt the new methods he must be prepared to calculate the cost. If half the care were to be taken by medical officers of health in ascertaining the cause of individual cases of puerperal sepsis which is invariably taken in tracing a case of typhoid fever to its source I believe that we should soon hear less of "deaths in child-birth." "Acute sepsis" is, according to Henry Jellett, "directly due to the infection of the uterus with *streptococcus pyogenes which has been introduced by the fingers or instruments of the medical attendant or nurse*"; therefore, it is a preventable disease and if the medical attendant or nurse introduces the poison in the large majority of cases it is undeniable evidence of his or her having neglected to take the necessary precautions.

If puerperal sepsis is to be stamped out we must take the laity into our confidence and teach them what it really is, what its etiological factors are, and show them how it can be prevented. Then alone, when they learn that it is a disease as infectious as typhoid fever or scarlet fever and very much more easily obviated than either one or the other of them, will they appreciate our efforts in procuring asepsis in midwifery.—I am, Sirs, yours faithfully,

Belper, Dec. 19th, 1897. MAURICE MCELLIGOTT.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 18th in a letter on the above subject "M.D." gives as the causes of the above (1) too frequent vaginal examinations; (2) stretching the cervix with the finger; and (3) too frequent use of forceps, and refers to the difficulty of carrying out asepsis. Now while opposed to the stretching of the cervix with the finger as routine practice and the too frequent use of forceps I myself can see no harm in frequent examinations provided our hands are aseptic. During the surgical operation our hands and instruments are in constant contact with the wounds and yet if aseptic no harm accrues. Why should it be more likely in making vaginal examinations in labour? I am certain that we can only produce puerperal fever by contamination from without provided no bits of placenta or membranes are retained.

My experience, though small, is that patients are inclined to think more of a practitioner who carries out the principles of asepsis than of one who does not. Even if it were not so a little conversation with them would soon put matters all right. "M.D." certainly overlooked one of the causes of the comparative stationary death-rate—namely, the constant custom of nurses and midwives to make vaginal examinations before the arrival of the medical attendant and even to syringe without our orders to do so and in spite of our orders to the contrary. Another cause is the attendance upon labour and the vaginal examination without removal of the coat and turning up the sleeves. This many of the older practitioners are in the habit of doing. I have been in the unenviable position of having to attend a patient in labour soon after making a necropsy. After the post-mortem examination was over I went home, changed every article of clothing, had a hot bath with carbolic soap, and before making each examination soaked my hands and arms in 1 in 20 carbolic lotion. The patient went through an aseptic puerperium without any bad symptom. If we are careful to take off our coats, turn up our shirt-sleeves, wash our hands and nails (which should be cut as short as possible) with soap and hot water and nailbrush, and make free use of 1 in 1000 perchloride of mercury or 1 in 20 carbolic lotion, and if we prevent nurses making examinations or syringing without our orders we shall see all our patients going through their puerperium without rise of temperature. Then will the stationary death-rate diminish both to the credit of ourselves and to the advantage of our patients.

I am, Sirs, yours sincerely,

Croydon. ROBERT HENDERSON.

To the Editors of THE LANCET.

SIRS,—May I say a few words to answer, or rather to supplement, the interesting and charmingly written letter of "M.D." in THE LANCET for Dec. 18th? Apart from the possible previous attentions of the "Wise Woman" in private cases as a source of infection there is the septic condition of the air in many cottages. When we remember that non-intervention was the rule in maternity hospitals when the death-rate was so high is it not highly probable that septic air and not septic fingers and instruments is the commoner source of puerperal septicæmia?

I have seen but three cases of the fatal puerperal fever described in books. The first I only saw post mortem by the coroner's order. She had been attended by a woman who made no pretence to any knowledge or obstetric skill and who left everything except tying and dividing the cord to nature. The patient had died on the eleventh day and there were no abrasions of the os or other obvious sources of infection, but the lying-in room was unbearably close. The second was the case of "born before arrival," the whole labour being completed before even the nurse arrived. The regular medical attendant thought there had been scarlet fever infection, but there was very little evidence of such; the room, however, was ill-ventilated and in a crowded quarter. The third was attended by a most careful and generally successful obstetrician, who took all reasonable care, but the room was very small and ill-ventilated. One man's experience is worth but little but these three cases have impressed on my mind the importance of clean air as well as clean hands and I have often suspected that a temperature of 102° F. or more on the third day is due to bad ventilation. They also taught me to be very chary of suspecting my professional brethren of carelessness in cases of this sort. The third case more especially brought this home to me, for the medical attendant, dreading the unmerited blame that threatened him, committed suicide before even the patient died. As to forceps I was taught by the late Dr. Palfrey at the London Hospital never to put them on until the os was either dilated or freely dilatable, and I believe the neglect of this rule is as bad an error as an obstetrician can well commit and deserves all the reproach your able correspondent "M.D." heaps upon it.

I am, Sirs, your obedient servant,

Dec. 24th, 1897. M.B.

"CYANOSIS IN CONVULSIONS."

To the Editors of THE LANCET.

SIRS,—In the *Edinburgh Medical Journal* for July, 1897, Dr. Alexander Robertson reported a case of alcoholic convulsions, the patient being "deeply cyanosed and unconscious." The treatment adopted was "an almost constant full stream of water from a large jug poured on his head which was held over the side of the bed." "About ten minutes after this application the convulsive movements stopped in the face and he was less cyanosed." The subsequent history of this case is not to my point except that he recovered.

A short report of a paper read at the Edinburgh Medico-Chirurgical Society on Cyanosis in Convulsions, by Dr. Foulis, is in THE LANCET of Dec. 18th, 1897. Dr. Foulis does not recommend the cold douche but advocates a method which he has employed for many years. He "introduces the handle of a spoon far back in the mouth and by means of

it compresses and brings forward the root of the tongue." "By this means air is allowed freely to enter the lungs" and the cyanosis disappears.

When two such apparently different lines of treatment are beneficial in exactly the same condition it is surely necessary to ascertain the common remedial element in each. Dr. Robertson expresses his belief that "the cold water probably produced its beneficial action by stimulation of the nervous system" through the sensory fibres of the fifth nerve. The exact height of this remedial stream is eighteen inches above the head and to prevent wetting the bed the head is held over the side of it. The patient is therefore put into a lateral or semi-prone posture. Dr. Foulis by means of frozen sections "demonstrated very vividly that cyanosis is the result of the base of the tongue falling against the posterior wall of the pharynx and thus mechanically obstructing the entrance of air." This well-known fact is equally vividly demonstrated in the living patient by Dr. Robertson, for he remarked that "on putting a teaspoonful of water into the mouth it seemed to pass into the windpipe." There is very little doubt that the explanation given by Dr. Foulis is the right one. As the subject is of great importance, and as one cannot always command either a spoon long enough and strong enough to carry out Dr. Foulis's method, or jugs of water to follow out Dr. Robertson's injunctions, it might be useful to suggest the following out of a line of treatment which is at hand on every possible occasion, is always effectual, and was the outcome of original experiments made in this country over forty years ago. These investigations were carried out for the late Dr. Marshall Hall in 1855 and 1856 and were communicated to THE LANCET by him. These experiments were the foundation of the method of artificial respiration now known as that of Marshall Hall and conclusively showed the influence of the position of the body over that of the tongue in cases of loss of consciousness from any cause. In a certain number of cases pulling forward the tongue forcibly by forceps is followed with benefit, but it is a moot point whether this results from a direct mechanical or an indirect nervous action. Dr. Bowles, who conducted many of the investigations just alluded to, has, however, clearly shown by a number of carefully recorded clinical cases in his book on "Stertor and Apoplexy" that the lateral or semi-prone position is *the* first and best line of treatment in all such cases of unconsciousness whether with or without convulsions. If this postural treatment be carried out cold douches or long spoons will not be required in all probability, for by it gravity acts on the tongue, which falls forward from the posterior pharyngeal wall, and there is no further obstruction to the air entering the chest. If Dr. Robertson will analyse his own case he will perhaps see that the embarrassed breathing was due to the falling back of the tongue and not to any laryngeal or respiratory spasm. This is proved practically by the passage of the teaspoonful of water into the windpipe and by the benefit the patient received by being held over the side of the bed to allow of water to be poured on him. The cold douche could not possibly have proved remedial through stimulation of the nervous system if the patient had remained in the recumbent attitude. His recovery is therefore a *post hoc* not a *propter hoc* so far as the douche is concerned.

As to Dr. Foulis's method, though mechanically satisfactory in some cases, it cannot be applied to all, and when the same beneficial result can be obtained by simply placing the patient in a lateral or semi-prone posture the spoon seems to be superfluous. The importance of a lateral position in some cases of embarrassed respiration has lately been remarked on by me,[1] more especially in relation to avoiding danger from anæsthesia during thoracic operations, and is merely an application of this cardinal point. Before concluding may I also refer to certain experiments lately made in Germany by Brosch?[2] They are in connexion with the danger of aspiration of gastric contents into the air passages during artificial respiration by Silvester's method and they completely confirm those performed in St. George's Hospital already alluded to and which resulted in the Marshall Hall method.

I am, Sirs, yours faithfully,

J. CHRISTIAN SIMPSON, M.D. Edin.

Cambridge, Dec. 28th, 1897.

[1] Medical Press and Circular, July 28th, 1897.
[2] Brit. Med. Jour. Supplement, Oct. 23rd, 1897.

TYPHOID FEVER IN BELFAST.

To the Editors of THE LANCET.

SIRS,—There is much in the reports of your Special Commissioner on the above subject with which the medical profession in Belfast is in entire accord. That the death-rate in the city is too high, that typhoid fever is unduly prevalent, that there has been carelessness in the construction of many of the houses of the artisan population, and that the corporation has not shown in sanitary affairs the same energy which it has exhibited in other departments—all this is true and should be freely admitted. Your Commissioner did not see fit to mention that all these points have been repeatedly insisted upon and the necessary reforms indicated by Dr. Whitaker, medical superintendent officer of health, in his annual reports, and that a deputation from the Ulster Medical Society some time ago waited upon the corporation and gave expression to the same views. While some progress has been made in the right direction, much, undoubtedly, yet remains to be done. But no good cause can ever be helped by exaggeration, and it is because I fear that the work of sanitary reform in Belfast is likely to be hindered, rather than promoted by your Commissioner's reports that I venture to address you. A city which has recently completed a vast scheme of main drainage at a cost of £300,000, and which is at present engaged in bringing a new water-supply from mountains thirty-eight miles distant at a cost of over £600,000 does not deserve to be held up to public odium as guilty of every species of sanitary sin. The attempt to represent Belfast as standing at the head of European cities in bad pre-eminence for its high typhoid rate is inaccurate and misleading.

What are the actual facts? The average death-rate for Belfast for the quinquennium 1891–95 was 24·8 per 1000—no doubt too high, but how much better is Manchester or Liverpool or Glasgow? I venture to affirm that the average death-rate of these cities, which are fairly comparable as regards their economic and industrial conditions with the Ulster capital, will be found quite as high as that of Belfast. In estimating the significance of any particular death-rate we must have regard to the social condition—above all, the occupations—of the people. Belfast has at least 60,000 persons engaged in flax-spinning and its allied industries which are necessarily somewhat unhealthy. Further, the town is built to a large extent upon the alluvial soil at the mouth of the River Lagan and satisfactory drainage is exceptionally difficult. When the significance of these two facts is perceived it will not seem in any way surprising that the death-rate in Belfast should exceed the general average.

The special *gravamen* of your Commissioner's attack relates, however, more particularly to typhoid fever and he gives figures for the first nine months of the present year to show that Belfast has actually much the worst record of the eighty-two chief cities of Europe as regards this disease. It is certainly a novelty in statistical inquiry to have a sweeping generalisation drawn from the returns of a few months. Typhoid fever has, unhappily, been epidemic in Belfast as in so many other places during 1897, but the prevalence of the disease has been altogether exceptional. What are the facts as regards the normal average of typhoid fever in Belfast? Taking the last quinquenium I find that the figures are as follows:—

Deaths from Typhoid Fever in Belfast.

1892	...	...	...	108 deaths.
1893	...	...	...	122 ,,
1894	...	...	...	145 ,,
1895	...	...	...	184 ,,
1896	...	...	...	136 ,,

Average annual number of deaths 139.

The population of Belfast according to the census of 1891 was 255,922. It is now computed to exceed 300,000. The typhoid fever mortality rate is therefore between 4 and 5 per 10,000. The rapid growth of the population makes it impossible to state it more precisely. Again I admit freely that this rate is too high, but is there anything particularly exceptional about it? The mean annual mortality from typhoid fever in England and Wales is stated by Hirsch[1] to be 3·7 per 10,000 inhabitants, but in some districts the rate

[1] Geographical and Historical Pathology, vol. i., p. 625.

is much higher. It is 4 per 10,000 in Northumberland, 4·4 in Lancashire, 5·4 in the West Riding of Yorkshire, and 6·5 in Durham. It is evident that if we in Belfast are in a bad way as regards typhoid fever, some of our neighbours across the channel are in even a more parlous state.

Your Commissioner states that "Belfast well deserves to be called to order by the united voice of civilisation." This is a good phrase. Let us see what the proposed call to order would amount to. I shall select for the purpose of comparison three representatives of civilisation—viz., France, Belgium, and Italy—a selection which will be admitted to be a fair one. The average annual death-rate from typhoid fever in 192 French towns is 5·93 per 10,000 inhabitants,[2] considerably over the Belfast rate. It is evident that France would not be able to join in the proposed call to order. In Belgium the deaths from typhoid fever are estimated by Hirsch[3] at 4·1 of the total mortality. In Belfast they are under 2·5 per cent. (e.g., 1895, total number of deaths 7168, deaths from typhoid fever 184; 1896, total number of deaths 6953, deaths from typhoid fever 136). It is clear that in the proposed call to order the voice of Belgium would give an uncertain sound. Italy shows a death-rate from typhoid fever of 9·63 per 10,000 inhabitants,[4] about twice the Belfast rate. Evidently Italy would be much better employed in setting her own house in order than in instructing us in Belfast. It is needless to pursue the subject further. We have a great deal too much typhoid fever in Belfast. The need for sanitary reform is great and urgent. No one is more sensible of these facts than the members of the medical profession here, but our efforts to bring about a more satisfactory state of affairs will not be helped by rhetorical exaggerations. There has been much careless and hasty construction of cheap houses, which the rapid growth of population explains but does not excuse. The Corporation has been so busy with the many problems presented by the phenomenal progress of Belfast that it has certainly devoted insufficient attention to sanitation. There is reason to hope and believe that our city councillors are awaking to a better sense of their duty in this matter. The time is opportune for endeavouring to direct and encourage their efforts, rather than for holding them up to public odium and ridicule. Dr. Whitaker is manfully struggling with the many difficult problems which the administration of his department presents, and he is ever ready to listen to the views of the members of the medical profession. His hands should be strengthened and not paralysed by wholesale fault-finding. Belfast has given many proofs of energy and public spirit. That she will successfully grapple with the question of sanitary reform cannot be doubted.

I am, Sirs, yours faithfully,

J. A. LINDSAY, M.D. R.U.I., M.R.C.P. Lond.,
Physician to the Belfast Royal Hospital, President of the Ulster Medical Society.

Belfast, Dec. 27th, 1897.

THE UNQUALIFIED ASSISTANT AND THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—The decision of the General Medical Council with regard to unqualified assistants appears to me to be cruelly unjust. In my opinion, which I believe will be shared by the majority of your readers, the unqualified assistant should be allowed to disappear gradually instead of being put to a violent death. There are two precedents for this. I remember that when I first entered the professional world of London forty-one years ago the Medical Directory of that time contained the names of a number of practitioners whose only qualification was that they were "in practice prior to 1815." They have now all joined the majority and where is the harm? Again, when the Pharmacy Act was passed chemists then in actual practice were allowed to continue dispensing for the rest of their natural lives without having undergone an examination. I would propose, then, that all unqualified assistants who can be shown to have been in practice for five years or more should be allowed to continue to act in the same capacity, but that all others should have to undergo an examination.

I am, Sirs, yours faithfully,

JULIUS ALTHAUS, M.D. Berlin.

Queen Anne-street, W., Dec. 15th, 1897.

To the Editors of THE LANCET.

SIRS,—As it would be extremely difficult to obtain a complete list of the names of unqualified assistants in any other way, and as some advantage might possibly accrue to them by organisation, may I be kindly allowed through the medium of your valuable columns to ask all my fellows in misfortune to send me their names and addresses, also full particulars of their own peculiar circumstances? It will be necessary for all who avail themselves of such an opportunity to enclose (for reply) a stamped directed envelope. It would be advisable for each one to state whether he would be willing to subscribe towards the inevitable expense of such coöperation. There are many registered practitioners who probably sympathise with us in our doleful calamity and would like to render us practical aid. If my surmise is correct their help is cordially invited and will be thoroughly appreciated by all the sufferers.

I am, Sirs, your obedient servant,

GRAHAM WINMORE.

Care of H. Fawssett, Esq., solicitor, 20, Cullum-street, Fenchurch-street, London, E.C., Dec. 18th, 1897.

To the Editors of THE LANCET.

SIRS,—Is no attempt to be made to modify the somewhat hasty and imperative order just passed by the General Medical Council to take away without any notice the employment of men who have not (either for want of funds or some other unforeseen circumstances) been able to pass the examinations for a qualifying certificate even though they have seen some hospital practice? I have had practical experience for over a quarter of a century of assistants, some with a diploma and some without, and have no doubt there are hundreds upon hundreds of medical men who have received most valuable assistance from this unfortunate class who without a notice are to be thrown into the wide world, many unfit for anything in the way of other work.

Why cannot the ruling powers have the same mercy as was allowed in 1815 to the medical men of that year? Could not the men who can satisfy the Council of their medical education by means of certificates of proficiency as assistants be allowed a certificate, and these would of necessity in a few years die out. This would be mercy indeed to many oldish men with families to support. My experience of the legal assistant is that he is a man green from college with a very little knowledge of prescribing or use of drugs who remains with you to pick up a little of the routine of practice and in a very short time leaves you to practise on his own account. I had an assistant seven or eight years and through a letter written by me he obtained a situation which he has held for fourteen years. He was at one of the large hospitals in London but from no fault of his own had to return home. He is married and has four children; he is an honourable, steady, and practical man with a perfect knowledge of every branch of his art, but now at nearly fifty years of age has to leave a happy home, and I would most earnestly ask those who are in power to stay their hands for a while. A committee of those who are in general practice should debate the question in an open manner. Many of our so-called great men know but little of the hardships and ups-and-downs of the general practitioner in country mining districts. In the town and district in which I have spent my life, prescribing chemists and quacks do a big trade to the injury of the medical man, they go on and will continue to do so, and can we wonder if the ranks of these people are still further added to by the unfortunate men now about to lose their only means of living? I would earnestly say, pray spare your hasty dictum, and I would suggest that a circular should be issued and it would be found that in the list of assistants are men worthy of a little sympathy. Something should be done and that quickly, and I am certain we should discover that a majority of the general practitioners would

[2] Davidson: Geographical Pathology, vol. i., p. 173.
[3] Geographical and Historical Pathology, vol. i., p. 624.
[4] Davidson: Geographical Pathology, vol. i., p.

ask for some mercy to these poor fellows. I enclose my card.

I am, Sirs, yours faithfully,

AN OLD G P.

To the Editors of THE LANCET.

SIRS,—Having opened a discussion in THE LANCET regarding the action of the General Medical Council towards registered practitioners employing unqualified assistants, perhaps you will kindly permit one of the hundreds of men who have thus come under the ban of this all-powerful body to give expression to his views on the subject.

I will premise my remarks by stating that I think it is desirable, not only for the interest of the profession but also for the common weal (and hereby be it understood that I am not acknowledging my own incompetency), to put an end to unqualified work. I protest, however, against the arbitrary and harsh manner in which the General Medical Council propose to carry it into effect. The medical profession is eminently one holding humanitarian principles. Now, Sirs, to take the bread and butter out of the mouths of the medical lepers without making the least provision for them and theirs is sheer barbarism; it is, moreover, an undue and improper application of power. Mr. Bryant's resolution to give us breathing space was humane. The appendix, which was carried "almost unanimously," is a species of cruel vivisection without the all-merciful administration of an anæsthetic. Doubtless there are many like myself who have always worked in a regular manner under the direct supervision of their principals. Surely a distinction should be drawn between us and those who have been guilty of "branch" irregularity. May an outcast inquire what was the position of the medical profession a hundred years ago? Until the passing of the Medical Act of 1858 how many of them were surgeons or physicians by examination? Since that time the unqualified practitioner has been in evidence and his existence has been perpetuated and indirectly sanctioned by the General Medical Council. Now with one stroke of the pen this august body seals our doom. For more than a decade I have held my present engagement to the satisfaction of my principals and their *clientèle* and it is a well-known fact that I am an unqualified man; there has been no sailing under false colours in my own particular instance. There are many in an exactly similar position. After leading thoroughly respectable lives are we to starve in the streets, to be peripatetic market quacks, or to become dangerous criminals? Surely men who have been engaged in this work and had serious responsibilities for many years have a moral and equitable right if not a statutory one? Surely we are worthier of a better and more kindly fate? I implore the General Medical Council not only for myself but for my fellow sufferers also for a more humane consideration—a consideration in keeping with the noble profession to which they belong. Are we unworthier of provision than those men who practised dentistry or the pharmaceutists prior to the passing of the Dental and Pharmaceutical Acts? Be it remembered that many persons were admitted even to the Medical Register itself upon signing a declaration and giving satisfactory evidence. Why turn us out of house and home without having the least prospect of subsistence? Prevent any further addition to our numbers, but—show some mercy to those who are already depending for their daily bread on this sort of employment. Many of us are competent accoucheurs, experienced in clinical work, and skilful in minor surgery and bandaging. Our knowledge of obstetric practice must be, and is, infinitely greater than that possessed by the certificated or trained midwife. Why deprive us of a privilege accorded to them? Are the ignorant village dames to continue while we are to be relegated to the past? Then, again, why should one class of unqualified men be exterminated and another unqualified species—dispensers, to wit—be allowed to ply their illegal avocation? That to my mind shows an utter absence of that splendid quality so dear to English hearts—fair play. This medical "muzzling order," if it is to efficiently protect the public, should apply all along the line! Why, again, should an unqualified man even *in statu pupillari* exist? If the medical schools are incapable of completing the education of their pupils why do not the General Medical Council insist upon a better system in that direction?

And, in conclusion, is there no member of the General Medical Council to speak on our behalf? Are they all entirely free from the stigma of having at some time or other engaged in unqualified help? Is there not one of them who has had the small day of grace given to him and thus enabled him to soar to his present height? If such there be, I ask him, by the remembrance "of the days that are no more," to use his influence in the exercise of clemency—to help to temper justice with mercy.

I am, Sirs, yours faithfully,

UNQUALIFIED.

"HOSPITAL ABUSE AT NEWPORT INFIRMARY."

To the Editors of THE LANCET.

SIRS,—I beg to enclose copies of the correspondence which has taken place with the directors since the publication of my statement in THE LANCET of Dec. 18th, 1897.

I am, Sirs, yours faithfully,

Windsor-place, Cardiff, Dec. 25th, 1897. HENRY C. ENSOR.

[COPY.]

Newport and Monmouthshire Hospital, Newport, Dec. 20th, 1897.

DEAR SIR,—At the request of the hon. medical staff the house committee met them in consultation on Saturday evening and it was then arranged that, subject to your writing and publishing the accompanying letter, the chairman would call a special meeting to reconsider the resolution passed by the directors at their meeting on Dec. 7th and give you an opportunity of explaining matters.

I am, yours faithfully,

Dr. H. C. Ensor, Windsor-place, Cardiff. J. K. STONE, Secretary.

[ENCLOSURE.]

To the Chairman of the Newport Infirmary.

DEAR SIR,—I much regret having refused to comply with the instructions of the directors as to certain cases and also that I should have published statements detrimental to the Newport Infirmary instead of asking for an interview with the directors. I now ask for such an interview in the hope that after explanation had the decision of the last board meeting will be reconsidered. I withdraw all aspersions against the board and agree to this letter being published.

I am, yours truly.

23, Windsor-place, Cardiff, Dec. 24th, 1897.

DEAR SIR,—I beg to acknowledge receipt of your letter of Dec. 20th. I have no reason to regret the action which I have taken and therefore decline to make any apology.

I am, yours faithfully,

HENRY C. ENSOR.

To the Secretary, Newport Infirmary, Newport.

"WATER-SUPPLIES AND SANITARY AUTHORITIES."

To the Editors of THE LANCET.

SIRS,—In your leading article under the above heading in THE LANCET of Dec. 18th, 1897, you remark in reference to the catchment area of the Stockport water company that from my recent report thereon to the town council "it would appear that the state of things existing there was most unsatisfactory," and further on you refer to "the gross impurities which at present are alleged to corrupt the catchment area." As it is the wish (which I am sure you share) of the Sanitary Committee and myself to be perfectly fair in dealing with the water question I venture to point out that as regards the water company you have, I think, adopted a somewhat unfavourable interpretation of my report. The condition of the ground up to about the middle of 1894 fully merited all you have now said about it, but at that time, in consequence of the vigorous action of the Water Inquiry Committee of the town council, the company commenced in earnest to set their house in order and my recent report contains a cordial acknowledgment of the very marked improvement they had effected, of the systems of periodical inspection and scavenging instituted and of the company's evident desire to protect their ground. The conditions to which the recent objection was taken were (1) the overflow on to an underdrained field of a cesspit on the very edge of the gathering ground and a mile from the reservoir; (2) the practice by farmers of "top-dressing" with a mixture of privy and cattle manure; and (3) the alleged deposit of some six loads of privy contents, &c., annually on a field half a mile from the reservoirs. These objections are, as anticipated in my report, receiving the careful attention of the company and I think it right that this should be stated.

Inspection of the farms on the catchment area was made by permission of the individual tenants, but the inquiry did not include the filtration works, as when previous notice to, and consent of, the owners is a necessary preliminary the result of an investigation is of questionable value. Full

powers of entry and inquiry in regard to all gathering grounds and waterworks "as a matter of right and not as a matter of courtesy" are, as you say, vitally necessary to all sanitary authorities and periodical inspection should be made by their health officers to ensure the enforcement and maintenance of wholesome methods and conditions.

I am, Sirs, yours faithfully,

CHARLES PORTER, M.D. Irel., D.P.H. Camb.,
Medical Officer of Health.

Health Office, Stockport, Dec. 21st, 1897.

HENOCH'S PURPURA.

To the Editors of THE LANCET.

SIRS,—*Apropos* of Dr. Dreschfeld's interesting observations regarding Henoch's purpura before the Manchester Medical Society, a report of which appears in THE LANCET of Dec. 18th, I may mention one or two symptoms not stated therein, but which appeared in the case which came under my notice and I believe was subsequently seen by him. Pain in or near a joint was not always present, but the onset of an attack was constantly ushered in by intense frontal headache. It would be interesting to know whether this is premonitory of retinal hæmorrhage which occurred in this case. The eruption always took the form of erythema circinatum (or what some term eczema marginatum). After the hæmaturia abated and the disappearance of albumin, &c., the urine invariably contained bile, the latter also being present with mucus in the vomited matter. During the acute stage the temperature was always raised but was exceedingly erratic in character.

I am, Sirs, yours faithfully,

JOHN ROBERT WILLIAMS, M.B. Edin.

Penmaenmawr, Dec. 20th, 1897.

LUNG SURGERY.

To the Editors of THE LANCET.

SIRS,—In your very excellent summary of the surgery of the year the writer unaccountably omits lung surgery, that branch of the profession which offers the most promise in cases of pulmonary troubles. Those who take an interest in this subject will find a valuable paper telling of a successful operation in a bad case of abscess of the lung by Dr. Northrup and Dr. McCosh in the 1897 Report of the Presbyterian Hospital, New York. It is one of those papers which would have enhanced the value of the recently published volume of the New Sydenham Society.

I am, Sirs, yours faithfully,

GEORGE FOY.

Cavendish-row, Rutland-square East, Dublin, Dec. 25th, 1897.

THE PLAGUE IN BOMBAY.

(FROM OUR SPECIAL CORRESPONDENT.)

SINCE the active operations of the Plague Committee appointed by the Government which commenced its work last March the weekly number of cases has been gradually decreasing in Bombay, although the total mortality has increased during the past few months owing to the prevalence of cholera. The organisation of lay assistance, particularly of native justices, with due regard to the feelings of caste, with a minute division of labour for every district, has enabled a thorough house-to-house visitation to be carried out, prompt removal of the sick to be effected, together with a segregation of all those who have in any way been exposed to infection. Every infected house is practically emptied and thoroughly disinfected. Private hospitals under the supervision of the district medical officers have been established by the generosity of the rich, enabling the Government to overcome to a great extent the many difficulties concerning caste and creed. Rewards for notification have facilitated very considerably the discovery of fresh cases and the collaboration of well-to-do citizens has overcome the preliminary dread of the hospital. By all these means isolation of the sick has been securely effected, but it was necessary to take the work away from the hands of the municipality and place it with an enlightened and energetic committee. With the full powers bestowed upon it the system above outlined is working well. Many fresh cases are still reported at Surat as well as other places and further medical assistance will shortly be despatched to Bengal and Madras.

The plague which broke out in Mandvi in August, 1896, made comparatively little progress until December. Then a sudden rise in the total mortality occurred, for the whole month the excess being over 4500. During January and February it continued at this frightful height, from which time until June it gradually declined. During this period of about nine months it is estimated that at least 20,000 persons died from the plague. The difficulties of registration are enormous and it is probable that the official figures are much below the truth. The first measures taken were directed mainly to the disinfection of houses in which the plague had occurred. They were apparently without the slightest avail. Then some attempt was made at segregating the sick, but this was done before proper accommodation had been provided; the consequence was that thousands were brought to the hospital only to die without due attention, for that could not be possibly paid to them by the few attendants who were overwhelmed with work. Imagine one small hospital intended for about 150 patients as the sole provision in a city where the cases of plague were dying at the rate of 1000 a week. About a twelvemonth ago the various committees began to provide themselves with hospitals, the lead being taken by the Parsis. The plague was nevertheless allowed to get ahead of all possible provision for meeting it and the natural history of the epidemic gave a large decline in the mortality before hospital accommodation for more than 300 cases had been provided. During the summer fifteen Government hospitals besides hospitals provided by the various castes for their own members were constructed, but by the time these were all ready the mortality had sunk of its own accord to 300 or 400 deaths a week. But the mere aggregation of the sick in hospitals appears to have little effect on the spread of plague. Experience seems to prove that contagion from one person to another is not by any means the chief cause of its spread, but that a house becomes in some way infected and is the source from which case after case subsequently proceeds. Whether rats or other animals known to be infected are the means of polluting a house is not definitely known, but the spread of the disease is noted to be gradual and as it were along adjacent districts rather than with the rapidity which follows the course of human beings.

The epidemic in Bombay took three months to develop, remained about three months at its greatest intensity, and took about three months to decline to the minimum yet recorded. Its decline was followed by a considerable rise in the mortality from cholera and all forms of fever. There are now (December, 1897) indications that the mortality from plague has again begun to rise and it is possible that a natural recrudescence is at hand. The moral of the experience obtained is that houses in which plague has occurred must not only be cleaned and disinfected but be left absolutely tenantless for some considerable period or else completely destroyed, the inhabitants displaced by this course being provided for in segregation camps. In addition frequent house-to-house visitations must be adopted to discover cases and those cases must be removed to hospital at the first possible opportunity. The large number of hospitals distributed about the most crowded parts of the city might be said to act as centres of infection, but this arrangement was looked upon as a measure of mercy to avoid the inconvenience and danger arising from having them at a distance from the houses of the people. The measure has been justified by experience as there is not the slightest evidence to show that the hospitals in any sense could be looked upon as centres for the spread of the disease. So slightly contagious appears the malady that of the number of attendants who have been employed on plague duty comparatively very few have taken the disease. Again, in upwards of 246 instances at one hospital where the friends of the patients attended their sick (and in twenty instances scarcely ever left the bedside) in not a single instance did the disease spread to the friends. On the other hand are numerous cases where houses have been disinfected from top to bottom, vacated, and shut up and then very shortly after the families returned plague cases broke out amongst them. These facts seem to show that plague is not one of those virulently contagious diseases like small-pox or measles (in a new community), but that the contagion attaches itself in some way to the buildings. In large numbers of instances therefore the authorities have at last marked certain buildings as unfit for human habitation

(U. H. H.). If this continues to be done on a sufficiently large scale it may be hoped that considerable impression may be made on the returns. In Surat, where the people are more crowded than in Bombay and where there are no drains or general water-supply, the disease has made great havoc; but the authorities have become alive to the necessities of the occasion and learning from the experience of Bombay of the measures required are now clearing whole quarters of the town, segregating the healthy in camps and removing the sick to hospitals.

With regard to treatment the inoculations of M. Haffkine are still under consideration. They consist of injections of a culture of the plague bacilli after the bacilli have been destroyed by heat. Dr. Yersin's antitoxin serum treatment has now been almost entirely given up. Many observers speak highly of the administration in full doses of the perchloride of mercury, plague patients showing a peculiar tolerance to this drug. It has been noted that syphilitics who have been more or less saturated with mercury at some time or other have borne the disease much more successfully than others, this observation having been frequently made among the prostitutes of the city. Twenty-two medical men specially sent out have just arrived from England. Three more are to follow as well as an increase to the trained nursing staff. The report of the Plague Committee up to June 30th has just been issued. It is very elaborate and markedly statistical, but increases our information of the disease in many points of detail. The more recent and purely scientific investigations of M. Haffkine and others into the bacillary treatment are looked forward to with great interest.

In Bombay there were 83 deaths from plague during the past week and 172 persons remain in the hospitals under treatment. In the observation camps 2577 persons are detained.

Dec. 10th, 1897.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Cremation.

THE annual report of the Manchester Crematorium, Limited, states that there is a profit balance over the working expenditure and that there is a fair prospect of a deficiency in the revenue account being nearly wiped out during the coming year. Since Nov. 30th, 1896, fifty-four cremations have taken place, making a total of 238 since the opening. One source of revenue is derived from visitors and the result of their somewhat gruesome curiosity amounts, it is said, to a considerable sum, showing, as the report states, "that the general interest in cremation has been well sustained." But the directors are not without that happy possession, a grievance. They have "certain knowledge" that deaths have occurred of persons favourable to cremation, but because they have not left written directions—before death, as the report puts it—for their cremation they have been buried and the directors feel "very strongly" that the supporters of cremation owe a duty to the cause that nothing should be left undone (probably during life) as to the course to be pursued afterwards. There is no doubt of the enthusiasm and earnestness of the crematoric cult. In Manchester "the whole of the management and conduct of the crematorium continues to be done gratuitously, neither the directors nor the secretary accepting any remuneration." The chairman, Mr. H. Simon, thought there was a distinct movement in the country in favour of cremation, evidenced by the fact that thirty-nine towns, ninety-four urban district councils, and twenty rural district councils had pronounced in favour of erecting crematoria where there was a call for them. It must be owned, however, that cremation, in spite of its real and supposed advantages, has not as yet roused any enthusiasm in the multitude and that it progresses slowly. No doubt this is due very much to sentiment and association, for there is nothing to call up the affectionate and reverential feelings raised by the thought of the village churchyard with, perchance, its ancient yews, and at present it would seem grotesque to make a pilgrimage to the furnace by the help of which "some village Hampden" has been cremated.

The Nursing of the Sick Poor.

The annual meeting of the Manchester and Salford Sick Poor and Private Nursing Institution was held in the Lord Mayor's Parlour on the 13th inst. Dr. T. A. Helme read the thirty-second annual report. Four new districts have been added during the year to those already supplied with district nurses and four additional nurses provided. The Diamond Jubilee was marked by the establishment of a home for the district nurses of Salford. But the report spoke of increased work, with increased expenditure, without corresponding increase of income, which, unless help came, would cripple and probably lead to the curtailment of the work. In supporting the adoption of the report Dr. Harris said the medical profession knew that the nurses were well trained and efficient. He made some startling remarks on some of the "so-called" nurses' homes in Manchester, in which he said there was too much sweating, and gave an instance in which a nurse was receiving 15*s.* a week for twelve weeks at a case of typhoid fever while the "home" with which she was connected was paid two guineas weekly for her services. He said some of these homes were merely registries and there was no guarantee of the efficiency of the nurses. Their own institution provided proper homes for the nurses and only employed those who had received a proper training. Sir Forbes Adams drew attention to the comparatively small number who supported the Manchester charities and it is to be feared that the same statement might be made of many other places. He said that only some 2000 people kept the Manchester charities going. "There were 20,000 able to contribute and 18,000 did not, not because they would not give or begrudged the money"—as he kindly put it—"but because the cases had not been brought sufficiently near home for them to ponder over and consider." We all know that "evil is wrought by want of thought" and the idea of duty as to the support of charities does not come readily to a large proportion of the comfortable classes. It may be, too, that all we hear and read of the abuse of charities tends to encourage the non-giver to keep his money in his pocket lest it should be misused. This, however, only supplies another argument in favour of a strict and just, but if possible merciful, dealing with the candidates for hospital or other relief.

Overcrowding at the Withington Workhouse.

At the meeting of the Chorlton Board of Guardians, held on the 24th inst., Mr. Jenner Fust was present and spoke of the overcrowding of the workhouse and asked for information as to what temporary arrangements had been made to relieve the pressure. He pointed out that the proposed additions to the nurses' home could only be of a trifling character and that when two additional hospital pavilions were built, which would have to be done immediately, further provision for the nurses would be necessary. In view of the separation of the management of the infirmary and the house, which he strongly urged, he advised them to use the nurses' home for the "ins-and-outs" children or for some other class and to build a new nurses' home on the land purchased for the enlargement of the infirmary. The present condition calls for prompt action, as when the children are sent to the new homes at Styal and the lunatics transferred to the care of the Joint Asylums Committee they will still, according to Mr. Jenner Fust, be without efficient accommodation unless they commence building at once and he urged them to look well ahead. He stated that there were already nearly 300 more people in the workhouse than it was certified to hold. It was practically determined to set about these changes and additions at once and a resolution was passed instructing the architect to prepare a block plan. At the same meeting Mr. Charles Higginson, M.A. Lond., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., was appointed junior assistant resident medical officer at the workhouse. There were two lady candidates, one of whom, Miss Octavia Margaret Lewin, M.B., B.S. Lond., was appointed *locum tenens* for a period of not less than three months. She had received the highest number of votes next to Mr. Higginson.

Dec. 28th, 1897.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Water-supply.

AT a recent meeting of the Water Committee a report was submitted from Professor Boyce respecting his bacteriological examinations of samples of water taken from Vyrnwy, Rivington, Dudlow-lane, Green-lane, and Windsor

Wells. The report showed that the waters from a bacteriological point of view were all in a highly satisfactory condition and remarkably free from germs. In the light of recent experiences in other towns as to the unhealthy condition of water supplies this cannot but be considered as a matter for congratulation.

New Infirmary for the Aged Poor of Liverpool.

The select vestry, with the approval of the Local Government Board, have purchased a portion of the Highfield estate, Knotty Ash, as a site for an infirmary for the aged poor of the parish at a cost of £10,000.

Death of Mr. Henry R. Powell.

Mr. Henry R. Powell died at his residence, St. Domingo-grove, Everton, on Dec. 20th, 1897. Mr. Powell, who was only forty-two years of age at the time of his death, enjoyed a large practice. He represented South Walton in the City Council of which he proved himself a diligent and conscientious member. He also occupied a seat on the West Derby Board of Guardians for several years.

Liverpool Medical Institution.

Dr. William Macfie Campbell has been nominated by the council as President for the ensuing two years. Dr. Campbell's selection is a very popular one. He has always taken a great interest in the management and transactions of the society, of which he has been twice vice-president; he has also filled the offices of honorary librarian, treasurer, and general secretary and on several occasions has been a member of council. Dr. Campbell is consulting surgeon to the Liverpool Northern Hospital, of which he was for ten years honorary surgeon.—By the will of the late Dr. James M. Turnbull the Liverpool Medical Institution has lately received a legacy of £50.

The New Head-master of the Charterhouse School.

By the appointment of Dr. Gerald H. Rendall to the headmastership of the Charterhouse School, University College, Liverpool, loses a principal who has proved himself in every way a scholar and an efficient administrator. Possessed of pleasing manners and a polished address Dr. Rendall was particularly happy in his relations with the governing body as well as with all the other departments of the College. The flourishing financial condition of the College has been largely due to his tact and diplomacy in enlisting the sympathies of our wealthy merchants in furthering the cause of education within its walls. Dr. Rendall, who has had a distinguished classical career at Trinity College, Cambridge, was appointed the first Principal of University College, Liverpool, in 1881, occupying at the same time the professorship in Greek. The medical faculty of the College, between whom and Dr. Rendall there existed the most cordial relations, will be particularly sorry to lose his valuable assistance, and one and all unite in wishing him a happy and prosperous career in the scene of his future labours.

Christmas Festivities at the Hospitals.

The Christmas festivities, which are an annual feature of much interest at the local hospitals and workhouses, were marred by a lamentable accident which occurred at the Mill-road Infirmary whereby one of the nurses, Miss Edith Ashcroft, lost her life. The deceased was engaged in a rehearsal for some amateur theatricals for Christmastide when her clothing came into contact with one of the footlights enveloping her in flames. She was so severely burnt that she succumbed within forty-eight hours.

Dec. 29th, 1897.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Site of the Royal Infirmary, Newcastle-upon-Tyne.

IT was hoped that this knotty point was settled and that no further impediment would be placed in the way of Mr J. Hall's wish to build a new infirmary for his native town, but it is not so. The stewards of the freemen and the town council both agreed to place at the disposal of the infirmary a site on the Leazes—a very suitable one in the opinion of the staff and of the Infirmary Committee—and one of the two selected by Mr. Hall. The next step was to promote a Bill in Parliament to make the transfer legal. At the town council meeting a fortnight ago power to promote this Bill was not obtained and the matter came up at a special meeting of the council on Dec. 15th. At this meeting a strong protest against the transfer was handed in by a deputation of freemen representing 639 out of a possible total of 888 freemen. In spite of this protest the council by a majority of 40 to 12 gave the town clerk authority to promote the Bill. The freemen will oppose the Bill in Parliament and it is an open secret that a very considerable sum of money has already been subscribed for the purpose. The senior member for the city, Sir Charles F. Hammond, himself a freeman and a Conservative, has publicly announced that he will oppose the Bill and so has another very influential member of the council, so that it is quite possible the Bill may have to be withdrawn. It is possible that the sick and lame poor of the northern counties may be deprived of the gift of £100,000 promised them by Mr. J. Hall, but it is sincerely to be hoped that better counsels will prevail and some arrangement arrived at by which such an unfortunate result will be avoided. It is not unreasonable to ask that an area equal to the extent it is proposed to take from the Leazes should be added to the Town Moor at the expense of the infirmary or of the town. There would be no difficulty in doing this and under the circumstances the freemen should be content with such an arrangement.

The General Medical Council and Unqualified Assistants.

The determination of the General Medical Council to somewhat abruptly put a stop to the employment of unqualified medical assistants will press in some cases in the north very harshly upon some men. There are several persons who have acted under the immediate direction of qualified men as assistants without any legal qualifications in the counties of Northumberland and Durham for many years, and these men have acquired a considerable amount of skill in the treatment of disease and are capable, steady, and reliable assistants. It would be a cruel thing to turn them adrift and it would certainly defeat the object the Council has in view—which is, it is to be presumed, to check unqualified practice. These men, turned adrift, would continue to practise without the supervision of a qualified man and in opposition to them. Some very hard cases indeed could be brought under the notice of the Council. Some of these men have been practising as unqualified assistants for twenty years and longer and they should not be treated by the Council with greater severity than unqualified practitioners were treated by the law in the year 1815. They deserve consideration at the hands of the Council, for the Council has winked at the employment of unqualified assistants for a long time.

Dec. 23th, 1897.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh.

THE following are the numbers of students who attended the several courses of lectures in the Medical Faculty of the University of Edinburgh during the winter and summer sessions of 1896-97: Zoology, 200; Botany, 217; Physics, 241; Chemistry, 256; Anatomy, 226; Physiology, 449; Materia Medica, 199; Pathology, 162; Medical Jurisprudence, 222; Midwifery, 188; Surgery, 199; Practice of Physic, 225; Mental Diseases, 193; and Ophthalmology, 84.

Western Infirmary, Glasgow.

The official intimation that the dispute between the managers of the Western Infirmary and Professor Macewen has been brought to a termination has been received with general satisfaction among both the medical profession and the public. The question actually decided refers only to the retention of the third ward under Professor Macewen's charge, the other matters at issue, the most important of which are the allotment of the new operating theatres and the nursing arrangements, remaining at present unsettled. These, more especially the former, are not without their thorny aspects, but there is a general anticipation that they, too, will terminate in a satisfactory agreement. It is understood that the retention of the third ward by Professor Macewen is to be accompanied by a withdrawal of the beds which had been offered to Professor Stockman

for "the clinical teaching of materia medica and therapeutics." This is no doubt a somewhat awkward step considering that the appointment had been formally made, but there are not wanting those who will welcome it, looking at the comment to which the allotment of beds for such a purpose gave rise and the neglect of the claims of the younger members of the infirmary staff which it necessarily involved.—The following appointments have been made in this institution:—Dr. D. Macartney to be assistant surgeon; Dr. W. R. Jack to be dispensary physician; Dr. G. B. Buchanan to be dispensary surgeon; and Dr. G. H. Edington to be extra dispensary surgeon.

Chair of Medical Jurisprudence in the University of Glasgow.

It will be learned with regret that owing to continued ill-health Professor P. A. Simpson is about to retire from the above mentioned chair. Already there are at least three local candidates in the field.

Glasgow Royal Infirmary Building Scheme.

There has just been published a sketch of the block plan (or ground plan) of the design to be adopted in reconstructing the Royal Infirmary. This proceeds on the idea that the new infirmary will be built on the pavilion principle. The blocks run from east to west and are connected from north to south by a central one-storey covered way; they are three in number, that in front being somewhat shorter than the other two. In rear of all stands the present "north surgical house," which is apparently to be left untouched. For the kitchens, engine house, &c., space will be found at the eastern boundary which is on a lower level than the remainder of the site. Unfortunately the plan gives no indication of the proposed height of the buildings, of the number of wards, or of the number of beds to be provided. The absence of such information probably accounts largely for the somewhat meagre response so far made to the appeal for subscriptions, there being a widespread feeling that the site is at present overcrowded and that accordingly any new buildings should provide accommodation for a decidedly smaller number of patients.

St. Andrews University.

The election of two assessors to represent the General Council on the University Court has resulted in the success of Dr. Dow, Dunfermline, and the Rev. Robert Scott, minister of Craig, each of whom has been re-elected. These gentlemen were the nominees of what is known as the "Bute party" in the Court, and their election means a triumph for the policy of that party and a continuance of opposition to the position and claims of University College, Dundee. Thus the prospect of a settlement of the dispute between St. Andrews and Dundee seems as far off as ever. It is announced also that the Scottish Universities Commission is to terminate with the close of the present year, and as the Commission has recently existed almost entirely with a view to attain a settlement of the dispute its demise means failure in this respect. Possibly some more powerful and imperative influence may now be invoked to close what is recognised as nothing less than an educational scandal. The termination of the Commission will certainly be an advantage to the other Scottish Universities which will now be free to utilise various powers conferred upon them, these powers being in suspension during the existence of the Commission.

Dundee Royal Infirmary.

In connexion with the erection of a maternity hospital in Dundee the directors of the Royal Infirmary are about to apply to the Privy Council for a new charter, which will confer upon them power to manage the new institution as well as the infirmary. Last week the governors met and discussed the matter, when it was ascertained that there was a desire to enable the honorary medical staff to act as directors, a privilege which they do not at present enjoy. Another meeting of the governors was held, when the question of medical representation on the directorate was discussed for several hours. After a very lively discussion it was agreed that an arrangement should be made enabling the hospital staff to act on the directorate, but that the number of such representatives should be limited to three. Edinburgh Royal Infirmary is the only other institution of the kind in Scotland on the governing board of which such representation is permitted and there it was secured only after a stiff fight. In all the hospitals in Glasgow without exception the staffs are expressly and by rule excluded from the directorate, a state of affairs which is giving rise to considerable friction and heart-burning.

Enforcement of Vaccination Acts in Aberdeen.

The parents of about forty children have been notified by the Aberdeen inspector of poor that unless the operation of vaccination be performed before Jan. 4th, 1898, the necessary steps will be taken to bring them before the sheriff. The parish council has, however, resolved that defaulters shall not be prosecuted oftener than once for each offence.

Donations to Aberdeen Hospitals.

The net sum subscribed for the Diamond Jubilee Hospital Fund in Aberdeen is reported as £5302 7*s.* 9*d.* Of this amount the committee have voted £1000 to the Hospital for Sick Children, £1000 to Morningside Hospital for Incurables, £800 to the Jubilee Nursing Association, and the balance of about £2500 to Aberdeen Royal Infirmary. The directors of the three hospitals have been recommended to devote the money to providing beds to be named so as to commemorate the Queen's Diamond Jubilee.

Dec. 27th, 1897.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

A Roentgen Ray Examination as Evidence in Court.

A CASE was recently tried in the Exchequer Division, Dublin, before Mr. Justice Madden in which the plaintiff, a lady from Urlingford, sued Mr. Harrington, the owner of the public car which plies between that town and Kilkenny, for £500 damages for injuries due to a fall from the car and caused by the carelessness of the driver. The local practitioner, who had examined the plaintiff soon after the accident, stated that in addition to a severe sprain of the ankle there was also a fracture of the fibula as evidenced by crepitus and pain. Dr. W. I. Wheeler and Dr. W. S Haughton, of Dublin, were produced by the defendant and deposed that in their opinion no fracture had existed. They stated that they had made during a short adjournment of the court a screen examination of the plaintiff's ankle-bones and that the outline of the lower portion of the fibula failed to exhibit the thickening that would be present after a fracture even though four months had intervened since the accident took place. This Roentgen ray evidence seems to have strongly impressed the jury, who awarded £50 instead of the £500 damages claimed.

Poor-law Nursing in Ireland.

It will be remembered that the system of pauper nursing in Irish workhouses was abolished by a sealed order of the Local Government Board in September last. A deputation representing the Irish Workhouse Association and the Philanthropic Reform Association waited on the Chief Secretary at Dublin Castle on the 14th inst. for the purpose of requesting that the Government should pay half the salaries of the certificated nurses who replace the pauper nurses in the Irish workhouse infirmaries and urging the adoption of other reforms. The deputation included Lord Monteagle, the President; the Earl of Meath, President of the Philanthropic Reform Association; Sir William Thomson, President of the Royal College of Surgeons in Ireland; Sir Christopher Nixon, physician to the Mater Misericordiæ Hospital; and many others. Lord Monteagle thanked the Chief Secretary for his action as President of the Local Government Board in abolishing pauper nursing in Ireland. Sir Christopher Nixon, in reply to a question of the Chief Secretary as to the meaning of the term "certified nurse," explained that it applied to persons who had been trained in a hospital for a period of from one to three years, who were tested at the end of their course by an examination, and who then received a certificate that they were qualified. He remarked that the recent order in reference to pauper nurses would to a great extent revolutionise the nursing system in Ireland and that arrangements were already being made in many large hospitals to institute a system of training for religious sisterhoods. Sir Christopher Nixon, moreover, stated that at the large hospital to which he was a physician arrangements were made for the training of Catholic Sisters of Mercy who would occupy in future the position of nurses in the workhouse infirmaries throughout Ireland, and ended his speech by an

appeal to Mr. Balfour to come to the rescue of the impoverished poor-law unions of Ireland which could not in many cases afford to bear the expense of the change by providing funds for that purpose. Dr. Joseph Smyth, of Naas, also addressed the Chief Secretary in favour of the adoption in Ireland of the Scotch system of paying half the salaries of trained nurses on the same principle that the Government now paid half the cost of the medicines supplied as well as half the salaries of the Poor-law medical officers. Dr. Smyth expressed the opinion that the nurses should have, as in Scotland, at least two years' training. The statement and remarks of the Chief Secretary, in reply, were of much interest and importance. In reference to the suggestion contained in the speech of the President of the Royal College of Surgeons in Ireland and in others, that a lady nurse should be appointed to act in conjunction with a medical inspector of the union workhouse infirmaries, his reply was the reverse of favourable. "With regard," he said, "to the appointment of a lady inspector I do not feel able to speak with much confidence; the experiment has been tried in London only and for a period of only four months and it would be rather early to decide whether it has proved a success or not." As regards a Government grant to assist the unions in paying the expenses of the change and the salaries of the trained nurses he pointed out that the grant which had been made for that purpose in Scotland was not exactly a gift from Imperial funds, but rather an apportionment of money which had previously been at the disposal of the Scotch authorities. He made the suggestion that it might be possible to allocate some of the general grant in aid of Irish rates contemplated by the Bill of next year towards the payment of trained nurses in the poorest of the unions of Ireland.

Royal College of Physicians of Ireland.

At a special meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on Friday, Dec. 17th, 1897, Sir William Richard Gowers, M.D. Lond., F.R.S., &c., was elected an Honorary Fellow.

The Water-supply and Sanitation of Belfast.

As reports have been circulated that the prevalence of typhoid fever in Belfast was connected with defects in the present water-supply the Commissioners requested Professor Frankland, of Birmingham, to again examine and report on their water-supply. He visited Belfast on Nov. 5th and 6th and again on the 12th and 13th, and he has presented to the water board a very exhaustive communication which was read at their meeting on Dec. 23rd. He points out that part of Belfast is supplied with Stoneyford water, another part with Woodburn only, and a third with a mixture of these two sources, while in the case of the Woodburn supply it is possible to further differentiate between districts which are supplied exclusively from the service reservoirs and those which receive a mixture of water partly derived from the old park filters direct and partly from the service reservoir at the same place. Professor Frankland gives tables showing results of bacteriological examination of water which he collected in various parts of the city, &c. In the course of collecting these samples in various parts of Belfast he was obliged to enter a number of workmen's dwellings and had an opportunity of studying the manner in which some of the poorer inhabitants of the city are housed and of examining the hygienic conditions under which they live. He gives notes made at the time of his visit of a number of most insanitary houses and of local dairies and concludes that there can be no question that the conditions of which he has been a witness and under which a large portion of the inhabitants of Belfast are living represent a very serious menace to the public health of the city. Besides the shockingly insanitary condition of many of the houses which he has inspected he is of opinion that a widespread danger prevails through the existence of dairies such as he has seen and described. Professor Frankland points out that it is obviously essential for the purpose of tracing a connexion between an outbreak of disease and water-supply that a map should be prepared showing where each notified case has occurred and that on the same or a companion map the districts supplied with the several kinds of water should be indicated. Nothing of this kind, he alleges, has been attempted. A charge has been made in reference to a farm in the vicinity of the Stoneyford reservoir, where cases of typhoid fever occurred during the winter, that the drainage of this farm polluted a feeder of the Stoneyford reservoir and that a short time afterwards typhoid fever became conspicuously more prevalent than usual in Belfast. To substantiate this charge Professor Frankland says the health authorities of the city should demonstrate that the increase in typhoid fever prevalence was limited to, or at any rate much more conspicuous in, that portion of the city supplied with Stoneyford water only than in any other water district of Belfast. This, he says, the health authorities have not established. Professor Frankland visited and inspected the places at both the Woodburn and Stoneyford watersheds where it is alleged there is pollution of the water-supply and he candidly admits that in both these areas there are considerable opportunities for the pollution of the water and says he has in his previous reports of July 24th and Oct. 13th referred to this defect in the gathering grounds. Much of this is, however, preventable and he urges that the Belfast Water Commissioners would utilise their powers to execute improvements and abate any nuisances in their water-sheds. The Water Commissioners are contemplating an arrangement to receive an immediate notification of all cases of infectious disease occurring in the gathering grounds so that steps may be at once taken to disinfect and remove all excretory products from such infected dwellings in such manner as to occasion the least possible risk to the purity of the water. In the case of gathering grounds the water authorities should either undertake the sanitation of any habitations in their catchment area or, what would be much better and perhaps in the end less expensive, buy out the offending dwellings. Professor Frankland reiterates his belief in the general improbability of the present water-supply to the city being responsible for an outbreak of typhoid fever amongst the consumers. He finds out that in the gaol (exclusively supplied by city water) no single case of typhoid fever has been notified and he shows how such isolated communities as prisons, asylums, and boarding schools form the most useful test objects, so to speak, in tracing the causes of zymotic epidemics, because they often throw light on the particular factors which may be possibly concerned in the production of an outbreak of disease. Although Professor Frankland believes that there is no evidence that the recent typhoid fever prevalence in Belfast is traceable to the present water-supply, he urges that such improvements in the supply as his investigations and inquiry have shown to be desirable should be carried out. With reference to the Ligoniel water-supply (where the serious outbreak of typhoid fever occurred recently) Professor Frankland says there is no doubt that both of the springs at Ligoniel, and especially the Wolfhill Spring, are extremely dangerous sources of water-supply, not by virtue of the water which they normally yield (for that appears to be of excellent quality), but owing to their exposure to surface contamination combined with the small volume of water involved and the absence of any agencies calculated to remove any matters gaining access to them. He urges that the works intended to bring the Belfast water to Ligoniel which the Commissioners have already commenced should be pushed forward as rapidly as possible and that in the meantime measures should be taken to effectively protect these springs from surface influences.

Dec. 29th, 1897.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Immunity against Serpent Venom.

M. PHISALIX has repeated the experiments of Fraser which go to show that bile has a marked influence on the venom of serpents. On Dec. 11th M. Phisalix reported his results to the Society of Biology. The immunising property belongs to the bile salts and in addition the pancreas of the viper renders innocuous a rapidly fatal dose of venom. Also from twenty to thirty milligrammes of alcoholic precipitate from the pancreatic juice of the dog confer immunity from a mortal dose of venom. The admixture of a quarter or a third of a cubic centimetre of viper's bile with venom renders the latter innocuous, but if the injection of these two substances is made separately death is not retarded—that is to say, if the venom be injected first. But bile inoculated as a preventive—i.e., before the venom—causes immunity and this is due to the bile salts and the cholesterine. M. Phisalix injected in succession into guinea-pigs the three chief elements of bile, the taurocholate and glycocholate of

soda and cholesterine, the bile being taken from any animal, and found that any of these substances immunises the guinea-pig against serpent venom. M. Armand Gautier said it was an important biological fact that M. Phisalix had injected pure salts and cholesterine—i.e., free from the ferments which exist in bile; it was important to mark this, for hitherto no definite crystalline chemical substance had been known to produce immunity. Such artificial immunity is therefore a development of the natural functions of the organism. M. Bouchard added that no such decisive proof had ever been given of the existence in the organism of antitoxic and bactericidal substance. Antitoxis does not come from microbes but from the glandular secretions, as he had said as long ago as 1880.

The Case of M. Heim.

M. Heim has just lodged his appeal against the decision of the council of the university before the Superior Council of Public Instruction. The council of the university, it will be remembered, had condemned him to the disciplinary measure of suspension from office under circumstances which I reported in my letter in your issue of Dec. 4th. The case will come before the superior council at its next sitting.

The Annual Public Meeting of the Academy of Medicine.

On Dec. 14th the Academy of Medicine held its annual public meeting under the presidency of M. Caventon. M. Bergeron read a panegyric upon M. Caventon, the father of the President, who with Pelletier had discovered quinine. M. Cadet de Gassicourt read a report of the prizes distributed in 1897. The François Joseph Audiffred prize, which consists of 24,000 francs to be awarded to him who shall have in the opinion of the Academy discovered a really curative or preventive remedy against tuberculosis, has not been awarded. The offer holds good for twenty-five years starting from April 2nd, 1896. Another prize not awarded was the Chevillon prize of 1500 francs offered to the writer of the best work upon cancerous affections—but a consolation prize of 500 francs was given to Dr. Livet for his work on the subject.

Injections of Sea Water Compared with those of Artificial Serum.

At the meeting of the Biological Society held on Dec. 11th MM. Quinton and Julia said that the question must be asked in the light of their experiments whether the effects of injections of artificial serum were not really due to the salts which are the basis of sea water. If this were so it seemed to them that sea water was superior to the artificial serum. Their experiments were done with the greatest possible care. They drew no conclusions from experiments upon different animals even though they were of the same age, the same weight, and the same kind. They argued solely from the results obtained by comparing injections of sea water and artificial serum in the same animal, special care being taken that the rate of injection, temperature, and pressure were the same. In some cases the sea water was injected first, in others the artificial serum. From five to thirty-three days were allowed to elapse between the injections. Dogs of all ages were used. The average for the rate of injection varied within very wide limits, but in every case the renal secretion was superior both qualitatively and quantitatively under the influence of sea water. Not only was the quantity secreted double or triple that secreted under the artificial serum, but despite its quantity the density was markedly raised.

Dec. 27th, 1897.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Hydrogen Peroxide in Surgical Practice.

THREE new preparations for the dressing of wounds have recently been tried in the surgical department of the Royal Charité Hospital and a report of the results has been published by Dr. Wagner in the *Deutsche Medicinische Wochenschrift*. They are termed menthoxol, camphoroxol, and naphthoxol and consist of a 3 per cent. solution of peroxide of hydrogen (H_2O_2) to which a quantity of alcohol and 1 per cent. of menthol, or 1 per cent. of camphor, or 2 per cent. of naphthol respectively have been added. They destroy the spores of anthrax within three hours and in a 10 per cent. solution within six hours. These preparations were used in about 200 cases of phlegmon, abscess, ulcers, and granulating wounds, sterilised gauze wetted with a 10 per cent. solution being applied to the part with the usual cotton-wool dressing above it. The dressings were renewed as a rule every second day. It was observed that as soon as the compound came into contact with the secretion of the wounds there was a considerable development of gas. In phlegmonous cases the necrosed tissue very soon came away, the secretion diminished, and healthy granulations appeared. Ulcers of the legs healed better under these dressings than under any other treatment. The three compounds did not show any difference in their action. They have an agreeable odour and are therefore very useful in fœtid sores or abscesses. No undesirable effect has hitherto been observed.

A New Hospital for Berlin.

The municipal authorities of Berlin have recently resolved on the construction of a large new hospital of 1600 beds, the cost of which will be no less than 13,000,000 marks (£650,000). Although the city of Berlin already possesses several very fine hospitals, such as the Friedrichshain and the Urban, the new one will surpass all the institutions of that kind in size as well as in completeness. In addition to the medical and surgical departments there will be special wards for diseases of women and for venereal diseases and a lying-in department will be connected with the hospital. The institution of special departments is a new feature as far as municipal hospitals are concerned, for the special branches of medicine have been hitherto represented only in the State and university hospitals in Berlin, the medical institutions belonging to the municipality being divided into only medical and surgical departments. The relatively small number of beds in the special clinics of the University and the Royal Charité Hospital has long been found insufficient and therefore the action of the municipal authorities will be a great benefit to those who require special treatment without being able to pay the fees of the numerous small private hospitals. The two public lying-in hospitals which Berlin at present possesses belong to the University and students as well as midwife probationers are trained there; the new municipal lying-in hospital will not be used for teaching purposes.

Post-Graduate Courses for Army Medical Officers.

For a considerable time the medical officers of the army have enjoyed the privilege of attending post-graduate courses conducted expressly for them by the professors of the different universities throughout the empire at the expense of the Army Medical Department. Every year a number of active and reserve army medical officers are ordered to join certain universities during the academical vacation, and whilst the students are absent they attend classes in anatomy, surgery, forensic medicine, &c., receiving in addition to their pay an extra allowance for their sojourn in the university town. These courses are to be still more extended and the War Office is asking Parliament to grant a sum for instruction of the medical officers in massage and in chemical and bacteriological research; scientific essays and works by these officers will also be printed and published for the Army Medical Department. But the Government, although it spends money willingly in whatever may increase the efficiency of the army medical staff, shows no corresponding liberality towards civilian practitioners who when desiring to attend post-graduate courses have to do so at their own expense, and even the civilian medical officers of health receive very little Governmental assistance in their studies. Some of the lay journals have with good reason drawn attention to the great difference in the care bestowed by the Government on the two classes of medical men.

Dec. 28th, 1897.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Francesco Brioschi.

THE year closes sadly for Italian science. The Senator Francesco Brioschi, who as President of the "Academia dei Lincei" held in Italy a post similar to that of Lord Lister in the British Isles, died rather suddenly on Monday night, the 13th inst., at Milan. He had been engaged

last summer in superintending some important drainage works at Palermo, where he contracted malarial fever which on his return to Milan assumed a typhoid character. It ran a lingering course from which no immediate danger was apprehended till last week, when certain thoracic complications set in. By this time he was confined not only to his room but to bed and on the night of Monday last he was seen by Dr. Rusconi, the physician in attendance, who on examination found his case to be critical. Dr. Rusconi having given his instructions had barely left the sick room when he was recalled only to find his patient expiring from "cardiac paralysis." So passed away Italy's greatest master of pure and applied mathematics, who with his pupil, Luigi Cremona, was honoured in every European seat of learning for the originality and fecundity of his scientific labours. Brioschi indeed deserves well of many other sciences besides his own. Alive to Italy's urgent need of more stringent academic work, particularly with a view to the professions, he lost no opportunity of heightening the intermediate and graduation courses of instruction and founded the Istituto Politecnico of Milan, of which till the day of his death he was the inspiring head. On the death of the ex-Prime Minister Quintino Sella some thirteen years ago, the post of President of the "Accademia dei Lincei" became vacant and by universal indication Brioschi succeeded to the coveted honour. In this capacity he improved even on his able and accomplished predecessor. All the sciences, including the biological and medical, felt the benefit of his enlightened and energetic sympathy; indeed, the papers read and published by the "Lincei" have of late years come forth with enhanced authority from the high-pitched scientific standard promoted by Brioschi. The fine arts and archæology were no less indebted to his catholic and all-conciliating tastes; and it is to him that the world owes the magnificent "Codice Atlantico" of Leonardo da Vinci and the "Forma Urbis Romæ" (a no less magnificent publication) of Rodolfo Lanciani. The "Monumenti Antichi" are other examples of his zeal for thorough learning in all its branches; while the *rapprochement* with Germany which, under Sella, brought such masters of research as Mommsen into close correspondence with the "Lincei" was perpetuated and developed by Brioschi. Dying in his seventy-third year, the author of papers and memoirs which fill many pages of the "Scientific Catalogue" of the Royal Society, Brioschi to all appearance had still much effective energy to put at the disposal of his country and of science. A sense indeed of premature loss pervades all the notices of his death—even the telegrams of condolence which from King Humbert downwards have these last few days been received by his native Milan.

Dec. 17th, 1897.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Carcinoma of the Uterus.

IN an interesting paper on Carcinoma of the Uterus, published in the *Medizinische Presse*, Dr. Thorn states that as a result of total extirpation by the vaginal method the average mortality has fallen very considerably. Seventy per cent. of the patients admitted to hospital are unsuitable for operation and of the remaining 30 per cent. there are a great many in whom the disease has already affected other organs. In the majority of cases relapse is due to portions of diseased tissue being left; of 62 patients who had undergone vaginal total extirpation 27 relapsed in the first two years. In Dr. Thorn's opinion vaginal total extirpation should be performed whenever the uterus is sufficiently moveable; Schroeder's amputation may be resorted to if there is commencing carcinoma of the portio and no operation should be attempted if the uterus is fixed by the carcinoma. Among 10,500 patients who attended the gynæcological clinic 226, or 2 per cent. of the whole number, were affected with carcinoma of the uterus. Among these there were 80 cases which were suitable for operation and 71 operations were performed, 9 of them being Schroeder's amputation and 62 being vaginal total extirpation. Of the 62 patients 30 (equalling 48 per cent.) were complicated cases; 1 of them survived the operation only eleven hours, and 1 died from embolism six months afterwards. Of the remaining 28 cases 16 relapsed during the first year and 4 during the second year, the practical result thus being that 71 per cent. relapsed in the course of two years after the operation. Three patients relapsed in the third year and 1 in the fourth. Vaginal total extirpation gave the following results with the 32 uncomplicated cases, 10 of them being excluded from the computation as two years have not yet elapsed since they were operated on. Of the remaining 22 patients whose operations date back for more than two years 2 relapsed during that period, being 9 per cent. of the whole, as compared with 71 per cent. among the complicated cases. Ten patients have not relapsed, and of these 1 has been for seven years and another for eight years without any return of the disease; 90 per cent. of the uncomplicated cases have therefore survived the critical second year and at least one-half have been completely cured by vaginal total extirpation. Among the 9 cases in which Schroeder's amputation was performed, there were 8 with commencing carcinoma of the portio, and 4 of these have not relapsed, one of them having been free from disease for eight years. Of the 71 operations 20 were performed at least five years ago and five of these patients have not relapsed. For improvement in the results Dr. Thorn is inclined to rely on early diagnosis of the disease and prompt performance of the radical operation rather than on new methods of surgical procedure.

Extract of the Suprarenal Gland.

Dr. Velich, whose investigation of the action of suprarenal extract on the circulation I have already mentioned in THE LANCET,[1] has just published a pamphlet on the influence exerted on the cutaneous blood-vessels by this extract when locally applied. Some observers, such as Bates, Darier, Dor, and Koenigstein, have already found that it diminishes hyperæmia of the conjunctiva and the sclerotic. Dr Velich has confirmed these results and has moreover shown that it causes anæmia of trachomatous granulations. Further experiments proved that under the influence of suprarenal extract the normal redness of the skin disappeared and the hyperæmic state of the skin due either to angio-neurosis or to scalding was replaced by anæmia. In cases of longer-continued hyperæmia of either the skin or the mucous membranes the effect of the extract was less obvious. Hyperæmia is due to paresis of the vaso-constrictor apparatus and suprarenal extract causes anæmia by stimulating this apparatus; when the extract causes no diminution in the size of the vessels the inference is that the vaso-constrictor apparatus has lost its excitability. Dr. Velich therefore concludes that suprarenal extract is a valuable remedy against hyperæmia.

Colles's Law and its Exceptions.

Dr. Hochsinger has published in the *Medizinische Wochenschrift* a series of interesting articles on Colles's Law and its Exceptions. He is of opinion that although there is no reason for supposing a syphilitic retro-infection of the mother from a fœtus affected with syphilis, it must nevertheless be conceded that there is a retro action of the fœtus on the mother, a retro-action which has the effect of producing a certain amount of immunity of the mother against syphilitic infection. Dr. Hochsinger's explanation of this retro-action is in accordance with that given by Finger and Duhring. He believes that the corpuscular infective material of syphilis is not able to pass through the placenta from the fœtus to the mother, but that the toxins originating in the blood of the syphilitic fœtus pass by diffusion into the vascular system of the maternal placenta and immunise the tissues of the mother against infection. As this immunity depends on the amount of the toxins and also on the length of time during which they have been acting on the maternal tissues it is easy to understand that both the degree and the duration of Colles's immunity may be variable. If only a small quantity of immunising material has been transmitted from the fœtus to the mother her immunity will be very limited and she will be capable of contracting syphilis at a comparatively early date or she may even be infected by her own child. This explanation fully accounts for all the exceptions to Colles's law. It is also obvious that a woman's chance of being rendered immune against syphilis increases with the number of her pregnancies by a syphilitic father. Dr. Hochsinger said that 20 cases of exception to Colles's law have been recorded during the last sixty years, only 4 of them being women who had been infected after having more than once

[1] THE LANCET, June 13th, 1896, p. 1680.

borne children which had inherited syphilis from the father; in the remaining 16 cases the infection took place after the first pregnancy. The history of the cases further shows that about half of the infants which ultimately infected their mother did not display any symptoms of syphilis at the time of birth but developed them during extra-uterine life. As to Fournier's theory of "syphilis par conception" Dr. Hochsinger conceded the possibility of a syphilitic man infecting his wife during her pregnancy, a case which may occur when the man was free from disease at the time of conception but contracted it subsequently. After impregnation by a syphilitic man some time is required for a sufficient quantity of immunising material to pass from the fœtus into the vascular system of the mother and lateness of the fœtal virus in becoming active increases the possibility of the mother being subsequently infected. If, therefore, the mother of a syphilitic infant shows secondary symptoms without having had any primary affection during pregnancy that must not be "syphilis par choc en retour." Weil and Neumann have reported cases of primary indurations in women who were pregnant with children infected with syphilis by the father. Neumann has also recorded a case where a woman pregnant with a syphilitic fœtus was affected with an initial sclerosis in the eighth month.

Dec. 19th, 1897.

Obituary.

WILLIAM WADHAM, M.D. ST. AND., F.R.C.P. LOND.,

EXAMINING PHYSICIAN TO THE FOREIGN OFFICE, CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL, AND PHYSICIAN TO THE MUTUAL ASSURANCE SOCIETY.

WE regret to announce the death of Dr. Wadham, which took place at his house in Park-lane on Tuesday last, December 28th. He had been suffering for some time from renal and cardiac disorders and their complications, and during the past twelve months had failed much in health, so that his death will hardly be unexpected by those who knew him.

William Wadham was born at Frenchay, in Gloucestershire, on Dec. 23rd, 1823, and was the third son of Thomas Wadham of Frenchay House, Winterbourne. He was educated at Abingdon School, Berkshire, and became a student at St. George's Hospital, where he won the prize in Clinical Medicine. Dr. Wadham gave a playful account of this success in the last address which he delivered to the students of St. George's Hospital a little over a year ago, and which we published in THE LANCET in November last

"If it be permissible," he said, "to allude to myself on an occasion like this, I should say that any small measure of prosperity I have had in this world—and I have had quite enough to make me a fairly contented man—had its origin in a successful competition for the prize in clinical medicine. This in my student days consisted of a book, and was given by the senior physician; the questions had reference only to cases which had been treated in the hospital during the previous winter session, and necessitated a constant attendance in the wards. This prize gained me in addition to the book the friendship of the physician who gave it, and as I very soon afterwards passed the necessary examinations to make me a surgeon and apothecary, two callings which I have never followed, he soon found me a very pleasant travelling appointment, introduced me as a full-fledged doctor, made himself responsible for the respectability of myself and of my family, and acted quite as a godfather, giving me the additional name of Wyndham. Upon being remonstrated with he very reluctantly withdrew this, saying it was a highly respectable prefix to Wadham, and that I ought to have been so christened. The degree I had to retain, and found it exceedingly embarrassing, especially when asked, as once happened, whether I was a Doctor of Medicine or a Doctor of Divinity, as I looked so very little like either. The appointment, however, proved my starting-point and rescued me from the ruck and placed me altogether in a very enviable position."

As a student Dr. Wadham rowed bow in the St. George's boat in the crew which won the Steward's Cup at Henley against the Leander and Oxford crews in the year 1843, and during the whole time he was in the St. George's boat, whether he was reading or not, he was never once absent from his seat, a point on which he justly prided himself. Jack Phelps, the well known Thames waterman of that day, said of him that he was the best light-weight bow he ever trained, which was rating him very highly, seeing how universally bow is a light weight.

Upon obtaining his qualifications Dr. Wadham travelled on the continent, where he spent two winters, the greater part of the time being passed in Rome. During this period he made friendships and formed ties which were never afterwards broken. In 1847 he graduated in medicine at the University of St. Andrews, and in 1850 took the Membership of the Royal College of Physicians of London.

His first medical appointment was that of Assistant Physician to the Brompton Hospital for Consumption, while he also held the office of Medical Registrar to St. George's Hospital. He was appointed Assistant Physician to St. George's Hospital in the year 1862, and became full Physician in the year 1868, a post which he held until 1887.

As a hospital physician he was quick to arrive at a correct diagnosis, and his prognosis often appeared to be due to a wonderful instinct. In treatment he always considered the idiosyncrasies of the individual, never treating any patient simply as a "case," but always trying to recognise that the man and his suffering made up one whole. He was also keenly interested in therapeutic progress, and made a series of investigations on the action of some of the newer antipyretics years before they were in general use in this country. These results were not published, and, indeed, we believe that two articles which were printed in the St. George's Hospital Reports are almost the only scientific contributions ever made by him to medical literature. But if he was a sparing writer, in the composition of his lectures he took great care, bestowing much time and thought on phraseology and arrangement as well as on matter. His clinical lectures were consequently always well attended and much appreciated by the students. The course of lectures he gave on Forensic Medicine were models of lucidity and must have been entirely free from any taint of dulness, for they were delivered at an early hour in the morning yet always to a full class. His knowledge was the fruit of his own experience and observation, not of any special effort to learn, and still less of the direct teaching of others. He was, therefore, intensely practical, and neglected to cultivate those theoretical and scientific refinements of diagnosis and treatment which are now rightly considered essential to attainment of the highest rank among physicians. His limitation, however, in this direction was amply compensated by his level-headed common sense, impartial judgment, and the diagnostic and therapeutic insight to which we have already referred. He possessed, if ever man did, that valuable medical faculty called by Dr. John Browne the knack of "happy guessing"; but those who thought that he had no reasons for his "guessing" because he could not or did not always state them at great length would have been much mistaken. His merits as a practitioner were not of a kind that could be readily understood by students, but to an observant house physician—and with the assistance of such this short memoir has been compiled—his practice offered an example more eloquent than teaching. His interest lay mainly in the every-day experiences of practice, but he would frequently astonish those who did not know him thoroughly by an accurate opinion in cases where more scientific men were at fault. His work was done without ostentation and without apparent effort—nay, a superficial observer might have said without enthusiasm, but those who followed his practice carefully soon began to comprehend and admire the method by which it was directed.

Dr. Wadham was Dean of the School of St. George's for some long time. In this position the knowledge which he obtained of the characteristics of individual students was very remarkable. He seemed to know what work each man had done, and what his peculiar hobby was. He also took great interest in athletic sports and it is not too much to say that the success which the Hospital enjoyed some few years ago in the playing-fields—quite a remarkable success, considering the size of the school—was in great measure due to his encouragement and to the *esprit de corps* which he so successfully stimulated by his constant presence. Dr. Wadham was, in fact, a sportsman as well as a physician. We have already referred to his skill as an oarsman; he was also a

first-rate shot and fine horseman. The chief departure that he organized during his term of office as Dean was one that made a great difference to the social life of the student. He inaugurated a luncheon club, then a new feature of hospital life. The present successful club at St. George's Hospital had its financial origin in the profits which were made by a woman who supplied light refreshment from a basket. Neither the Governors of the Hospital nor the majority of the medical staff were in favour of the institution of a comfortable place for men to lunch at the hospital, but Dr. Wadham was strongly of opinion that it was better that the student should be made comfortable within the walls of the building than to be driven to a public-house for his refreshment; and those who remember the state of things which generally existed at the metropolitan hospitals twenty-five years ago must all now admit that the establishment of a luncheon place at the hospital was an admirable idea. Nowadays, we believe, every London hospital has a suitable refreshment place, so that it is difficult for present students to realise the mental attitude of those who looked upon such an institution as dangerous. Yet so it was regarded by a very large majority of hospital physicians, not quite such acute men of the world as the Dean of St. George's.

The success of Dr. Wadham as Dean of the School and as a physician was due not only to his knowledge of his art, but to his unusual capacity for placing himself in the position of, and sympathising with, those with whom he came in contact. On this quality of sympathy which he possessed so strongly, and of its power, we will venture to quote his own words from the address to which we have already alluded:—

"Without sympathy it is impossible even to obtain a full and accurate account of a patient's sufferings if he sees or even fancies that you are not interested in him; he closes his heart against you and leaves you to discover what you can of his condition by means of the stethoscope, the thermometer, and the test tube; but he keeps to himself those subjective symptoms which are so valuable in aiding us to form a diagnosis. Probably nothing is so much longed for under all human trials as sympathy, and this is especially the case in physical suffering and illness. You see it in the little child who, having fallen and hurt his hand, presses it almost instinctively against his mother's lips that she may kiss away the pain. You may see it any day and every day in the wards of the hospital, where the broken-down and worn-out bread-winner lies rendering his last breath, soothed and fortified by the presence of the wife who has shared his few pleasures and his many privations; and all of you hereafter will see it in another class of society, where the rich man, dying in the midst of all that science and talent and money can do to rescue him from his fate, cannot brace himself to calmly meet the inevitable unless he can read in the sorrowing faces of those around him a continuance of their affection and the evidence of their sympathy."

The day for such scientific attainments as those of William Wadham is now passing, or has already passed away. The direct and successful application of strictly scientific methods to medical practice is now a matter of regular routine. He, however, flourished in a less enlightened age, and represented at its best the type of those practitioners who in a generation preceding the present upheld and advanced the dignity of our profession. If in his clinical methods he would now be regarded as obsolete, it must be remembered that in other and more obvious provinces of the physician's career he presented an example that it will for ever be good for medical men to copy. He was a painstaking, sympathetic, generous and unostentatious man.

JOSEPH JOHN FOX, M.R.C.S. ENG., L.S.A., F.S.S.

MR. FOX came of an old medical family at Falmouth, his great-grandfather, Joseph Fox, surgeon (died 1784), having married into the still older medical family of Hingston, then of Penryn. Both families belonged to the Society of Friends. Mr. Fox's mother was a Tregelles, aunt of Dr. S. Prideaux Tregelles, the biblical scholar, and his grandmother a Forster, of the family of the late Right Hon. W. E. Forster. One of his grand-uncles was Dr. Joseph Fox, physician to the London Hospital from 1789 to 1800; another was the first Dr. Edward Long Fox, founder of Brislington House. The late Dr. Wilson Fox belonged to another branch of the family. The Fox family can be traced back through the Crokers to a connexion with many old Devonshire families, such as the Courtenays and Fortescues. Mr. Fox, who was born at Falmouth in 1821, came up to London (by coach) in 1839 with an introduction to the late Dr. Thomas Hodgkin. The latter told him of the newly-started University of London and said that he must matriculate. The examination, which came off in three weeks' time, was successfully passed and Mr. Fox took honours in chemistry and mathematics, having as colleagues in the latter subject Todhunter, S. Newth, and Henry Jessel. He entered at University College and studied under Quain, Sharpey, and Owen, distinguishing himself especially in natural science, and obtaining the gold medal in chemistry and other honours at the first M.B. examination.

In 1843 he settled in Stoke Newington, then a good rural suburb amongst green fields, and becoming engaged in middle-class practice, which he carried on for about thirty-five years, he never presented himself for the university degree. He was much respected and trusted by his patients, many of whom were personal friends, and he used to say that medical practice amongst one's equals is the pleasantest kind. He was surgeon to several local institutions, and he also contributed to the philanthropic and intellectual life of the district, founding in 1845 the Stoke Newington Mutual Instruction Society, by which for many years courses of lectures on scientific, literary and social topics were arranged. Its success led to its becoming the parent of many other such societies elsewhere. Mathematical studies had for his active mind an especial charm and he was wont to solace himself after the day's fatigues with the calculus of variations or the dynamics of a particle. This bent of mind led him to devote much time to medical statistics and he followed with keen interest the pioneer work of his friend Dr. William Farr in the registration of births and deaths and the use of the data thus obtained. Mr. Fox contributed to the *Medical Times and Gazette* between 1856 and 1859 a series of papers on the mortality of the metropolis, dealing with the influence of season and weather, of sex and age, and of locality and sanitary condition, especially upon the incidence of zymotic diseases. He also took an active part in the Statistical Society; thus in 1858 he read a paper on the Vital Statistics of the Society of Friends (including life tables calculated for its members), which was referred to by Farr as an authority. He was an active member of the Society of Friends, taking a share in the various movements which it set on foot and using his pen in book and pamphlet in its interests. When near the age of fifty years symptoms of Ménière's disease appeared and, inducing deafness and a liability to seizures, compelled him to retire from practice about 1880. The latter years of his life were spent in quiet retirement and in the enjoyment of a wide range of reading and of the varied interests of his children's lives. He died at Muswell-hill, N., on Dec. 15th, 1897, in his seventy-seventh year, from old age and pneumonia. Of Mr. Fox's six sons five entered the medical profession and three of these are in active practice.

GEORGE HENRY EVANS, M.R.C.S. ENG., L.S.A., L.R.C.P. EDIN., J.P.

MR. EVANS was the oldest and one of the most respected practitioners in Leigh, Lancashire. He was born at Limeside, near Oldham, on Aug. 28th, 1833, and was educated at Talketh Hall, Preston, and Croft House, Brampton, Cumberland. He received his medical training at Manchester and obtained the diplomas of M.R.C.S. Eng. and L.S.A. in 1858 and L.R.C.P. Edin. in 1864. After receiving his medical education he entered the navy as a volunteer and took part in the Baltic expedition in 1854–55. He received the medal for services on H.M.S. *Cornwallis* and was present at the bombardment of Sweaborg and the night attack upon the Russian batteries. He settled down in Leigh in 1858 and for many years enjoyed a large practice. He took a deep interest in local affairs and was the first chairman of the local board. He was honorary assistant-surgeon to the 1st Volunteer Battalion Manchester Regiment and was appointed a Justice of the Peace for the county in 1884. He was most punctual in his habits and for over twenty-seven years he had regularly discharged at 10 P.M. a rocket at his own expense. This was known as the Leigh time signal and was of immense service to the whole surrounding district, so much so that a presentation publicly subscribed for and consisting of an illuminated address, a silver tankard and ornaments, was made to him only a few days before his death in recognition of this service.

Mr. Evans died at his residence, Avenue House, Leigh, on

Dec. 11th, 1897, after an illness of only about three weeks' duration and was interred at Rayton, near Oldham, on Dec. 15th. He was twice married (the second time so recently as April, 1897).

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the Examinations for Medical and Surgical Degrees, Michaelmas Term, the following candidates were successful :—

SECOND EXAMINATION.

Part II. Human Anatomy and Physiology.—Attlee, B.A., St. John's; Badcock, B.A., Catharine; B. L. T. Barnett, B.A., St. John's; Bousfield, B.A., Pembroke; Bowen, B.A., Gonville and Caius; J. M. Brydone, Jesus; Byles, King's; A. J. Clarke, Emmanuel; Claxton, King's; Crompton, B.A., Gonville and Caius; Davies-Colley, B.A., Trinity; Dunlop, B.A., Sidney-Sussex; Emerson, B.A., Gonville and Caius; Foster, B.A., King's; Gabb, Downing; T. B. Gilbart-Smith, B.A., Trinity; Greene, B.A., Corpus Christi; A. W. Greig, B.A., Jesus; Holmes, B.A., Gonville and Caius; Home, B.A., Trinity; A. C. Ingram, St. John's; J. H. Kellgren, Trinity; Knight, B.A., Emmanuel; Lambert and Laycock, St. John's; Leech, B.A., Christ's; P. G. Lock, B.A., Gonville and Caius; McBryde, B.A., King's; N. Maclaren, B.A., Trinity; Murray, B.A., St. John's; J. C. Newman, B.A., and G. H. Orton, B.A., Trinity; Paterson, B.A., and Paton, B.A., Gonville and Caius; Perkins, B.A., St. John's; Rashleigh, M.A., Trinity; Sedgwick, Sidney-Sussex; Stirling-Hamilton, B.A., Jesus; Susmann, B.A., and T. P. Thomas, B.A., Gonville and Caius; Ticehurst, B.A., Clare; R. H. Urwick, B.A., and H. H. Weir, B.A., Trinity; and W. H. O. H. Woods, B.A., H. Selwyn

THIRD EXAMINATION.

Part II. Medicine &c.—Allfrey, B.A., and R. H. Bell, B.A., Trinity; Boulton, B.A., Clare; J. R. Charles, B.A., Gonville and Caius; W. L. H. Duckworth, M.A., Jesus; J. G. Forbes, B.A., Christ's; Godson, B.A., St. John's; A. H. Greg, B.A., Trinity; Hardy, B.A., Jesus; Harman, B.A., and G. C. Jackson, B.A., St. John's; Jeaffreson, B.A., Christ's; Jephcott, B.A., Gonville and Caius; Kirk, M.A., Christ's; Lindsay, B.A., Sidney-Sussex; McCarthy, B.A., non-collegiate; G. F. McCleary, B.A., Trinity Hall; Manners-Smith, M.A., Downing; Martin, B.A., Gonville and Caius; Mathias, M.A., Christ's; Michael, B.A., H. Selwyn; Molesworth, B.A., and C. S. Myers, B.A., Gonville and Caius; H. D. O'Sullivan, B.A., and Paterson, B.A., Emmanuel; Petyt, M.A., Christ's; Roe, B.A., Pembroke; Shewell, B.A., Trinity; Skyrme, B.A., Christ's; Sladen, M.A.; Gonville and Caius; B. H. Slater, B.A., Trinity; Trouncer, B.A., Jesus; W. R. Wilton, B.A., Corpus Christi; Woolley, B.A., Gonville and Caius; and Yeld, B.A., Trinity.

UNIVERSITY OF LONDON.—The following candidates have passed in the subjects indicated :—

M.D. EXAMINATION.

Medicine.—Charles Bolton, B.S., B.Sc., Joseph Norwood Brown, B.S., and Thomas R. H. Bucknall (gold medal), University College; Frank Marsden Burnett, St. Bartholomew's Hospital; Peter Kevin Byrne, B.S., B.A., University College; Dorothea Caine, London School of Medicine and Royal Free Hospital; Felix Bolton Carter, University College; D. Arnold Chaning-Pearce, B.S., Guy's Hospital; Margaret M. Traill Christie, B.S., Royal Free Hospital; Francis James Coutts, B.S., University College; Rosina Clara Despard, Royal Free Hospital; Harold Bertie Dickinson, University College and Royal Infirmary, Liverpool, and St. Bartholomew's Hospital; *Walter d'Este Emery, B.Sc., St. Bartholomew's Hospital; George Gilbert Genge, B.S., St. Thomas's Hospital; Sinclair Gillies, St. Bartholomew's Hospital; Charles John Harnett, Guy's Hospital; George Bertram Hunt, B.S., University College; Charles Ernest Mackenzie Kelly, B.S., Owens College; John Cyril Holdich Leicester, B.Sc., University College; Frank Spiller Locke, St. Bartholomew's Hospital; William Arthur Marris, Mason College; Leonard Rogers, B.S., St. Mary's Hospital; Raghavendra Row, B.Sc., Grant Medical College, Bombay, and University College, London; Alfred Ernest Russell, B.S., St. Thomas's Hospital; John Lorimer Sawers, University College, London, and North Staffordshire Infirmary; Harold Batty Shaw, B.S., University College; Harry Sinigar, Mason College; Thomas Morrell Thomas, M.S., Guy's Hospital; Wilfred Batten Lewis Trotter, University College; Francis Thomas Waldron, B.S., London Hospital; and William Charrington Wood, St. Mary's Hospital.

State Medicine.—Christopher Thackray Parsons, M.D., St. Mary's Hospital and University College.

M.S. EXAMINATION.

John Howard Cook, University College, and Francis James Steward and Claude Edwin Taylor, M.D., Guy's Hospital.

B.S. EXAMINATION.

First Division.—Brennan Dyball, St. Thomas's Hospital; Arthur Henry Evans, Westminster Hospital; Charles Herbert Fagge, Guy's Hospital; Alfred Lucette Home, St. Thomas's Hospital; Cuthbert Henry Jones Lockyer, Charing-cross Hospital; Hugh Percy Noble, Middlesex Hospital; Frederick William Robertson, St. Bartholomew's Hospital; John Dill Russell, University College and London Hospital; Alfred Walter Sikes, B.Sc., St. Thomas's Hospital; and Edwin Josiah Toye, B.Sc., St. Bartholomew's Hospital.

Second Division.—Walter Rothney Battye, B.Sc., University College; Joseph Ernest G. Calverley, St. Bartholomew's Hospital; Mary Frances Cornford, Royal Free Hospital; Sydney Cornish, St. Bartholomew's Hospital; Edward Fisk, Guy's Hospital; George Frederick Saunders Genge, Westminster Hospital; Alice Mary Hawker, London School of Medicine and Royal Free Hospital; Cortis Rawsthorne Hodgson, Guy's Hospital; John Llewelyn Jones, University College; Beatrice Knowles, Royal Free Hospital and London School of Medicine; George Kenny Levick, Guy Eugene Manning, M.D., and William Tayler Milton, Guy's Hospital; William Graddon Mortimer, London Hospital; Richard Henry Norman, Westminster Hospital; Geo. E. Richmond, B.A., B.Sc., Guy's Hospital; James Percival Scatchard, St. Thomas's Hospital; Thomas Henry Craig Stevenson and Evan Thomas, University College; Philip Northcott Vellacott, Guy's Hospital; and Percy Glyn Savours Williams, University College.

* Obtained the number of marks qualifying for the Gold Medal.

UNIVERSITY OF BRUSSELS.—The following candidates were successful at the M.D. examination in December :—

Honours.—Lilian M. Blong, Dipl. Calcutta Med. College, and D'Albuquerque, L.M.S. Bombay, L.R.C.P., L.R.C.S., L.F.P.S. Scotland.

Pass List.—A. M. Barford, M.R.C.S. Eng., L.R.C.P. Lond.; H. Wrangel Clarke, M.R.C.S. Eng., L.R.C.P. Lond.; Alfred J. Grant, M.R.C.S. Eng., L.R.C.P. Lond.; D. J. Macaulay, L.R.C.P., L.R.C.S., L.F.P.S., Scotland; H. P. Miller, M.R.C.S. Eng., L.R.C.P. Lond; Pryce Peacock, L.R.C.P., L.R.C.S., L.M., Ireland; and Lilian E. Sykes, L.R.C.P., L.R.C.S., L.F.P.S., Scotland.

NEWTON ABBOTT WORKHOUSE.—The new workhouse infirmary at Newton Abbott, Devonshire, will be formally opened by Lord Clinton on Jan. 6th.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Dec. 17th, 1897, the President, Dr. B. G. Morison, being in the chair.—Dr. J. T. Conner showed a case of Alcoholic Purpura in a woman, aged thirty-seven years, of alcoholic habit. The eruption consisted of petechiæ and ecchymoses. She had had slight epistaxis and metrorrhagia. Evidence of visceral disease was wanting. Two years previously there had been a similar attack. The presence of the alcoholic cause and the absence of any other led Dr. Conner to diagnose this case as an example of the rare alcoholic purpura.—Dr. Aitken read notes of two cases of General Paralysis of the Insane, and showed typical specimens of their writings. Case 2 was that of a woman; there was no history of syphilis. The pupils were active but unequal; the fundi were normal. There were muscular tremors, speech defects, and much difficulty in walking. The patient was suicidal, emotional, and approaching dementia. Her writing showed great deterioration in four months.—Mr. W. C. M'Donnell read notes of a case of Fatal Senile Neurasthenia with Paresis. A feeble woman, aged sixty-four years, suffered from headache, at first frontal, then left-sided, persistent and intense, which gradually spread to the occiput, cheek, and nasal walls. The symptoms were all unrelieved by various drugs. The fundi were normal; the pupils were sluggish, the left being smaller than the right; vomiting and diarrhœa were present; the knee-jerks were at first brisk but later were unobtainable; and the left naso-labial groove was much less marked than the right. In a month from the onset the left eyelid drooped, yet could be occasionally raised by an effort. Both hands were very weak, and in the right there was some incoördination. The patient was sleepless. Simple left internal strabismus appeared four days before death, and two days later right internal strabismus as well. Post-mortem examination yielded no macroscopic explanation of the cause of her symptoms.—Mr. A. W. Galloway read notes of a case of a Pedunculated Venous Angioma in existence twenty-five years in the skin of the popliteal area which was increasing. He passed a double ligature through the pedicle and separately tied the halves and round the whole tightened an elastic ligature. Six days later he excised the tumour. The patient made an uninterrupted recovery.

BEDFORD MEDICAL SOCIETY.—A meeting of this society was held on Dec. 16th, the President, Mr. R. H. Kinsey, being in the chair. Dr. Goldsmith showed a woman with an Ulcer of the Outer Canthus and Enlargement of the Pre-auricular Gland who had improved with anti-syphilitic treatment. Mr. Nash showed (1) a Varix the size of a pigeon's egg which he had removed from the internal saphenous vein just below the knee on account of thrombosis; and (2) 104 Gall-stones and the patient from whom he had removed them by cholecystotomy five weeks previously on account of repeated attacks of biliary colic. Mr. Cock read notes of a case of Double Castration for Enlarged Prostrate in an old man, which had relieved the pain and frequency of micturition and reduced the residual urine from eight to two ounces. Mr. Nash read notes of three cases in which he had performed Double

Vasotomy for Enlarged Prostate. In the first case the patient was aged sixty-nine years; the residual urine measured fifteen ounces; there was a continual desire to pass urine and catheterisation was very painful. A month afterwards double vasotomy was performed, the residual urine was reduced to two ounces, and the patient could retain urine for three or four hours and was kept comfortable by using a catheter twice a day. The second patient was aged seventy years; the residual urine was six ounces, there were incontinence of urine and cystitis, and the urine was of specific gravity 1010. Double vasotomy was performed at one sitting. The wounds healed in four days, when the patient got up. On the sixth day he began to wander in his mind and on the thirteenth day he died from mania probably of uræmic origin. No post-mortem examination could be obtained. The third patient was aged seventy-five years. There were two years' history of difficult micturition; the bladder was distended up to the umbilicus; and the urine was alkaline and of specific gravity 1020. The vasa were ligatured and divided at a month's interval. After each operation there was temporary improvement in passing urine. Now, at the end of three months, he could not pass any urine without a catheter owing to the prolonged atony and over-distension of the bladder. The prostate had shrunk considerably. Dr. Ross showed a young man with Hæmophilia. Six months ago the patient was in hospital and nearly bled to death from an incision into a suppurating hæmatoma. When shown he had hæmorrhages into his right elbow and both knees. Dr. Ross also showed photographs of a man who whilst in hospital for tuberculous disease of the tibia had developed a poly-arthritis affecting all the joints of the upper extremities and to a lesser extent those of the lower limbs. The onset had been accompanied by fever and great pain. The disease had been entirely uninfluenced by rheumatic remedies.

BOOKS, ETC., RECEIVED.

MAILLIÈRE ET FILS, Paris.
Nouveaux Elements de Pathologie Chirurgicale Générale. Tome I. 1895.
La Responsabilité Médicale. Par P. Brouardel. 1898.

CHAPMAN AND HALL, London.
What is Life? Or where are we? What are we? Whence did we come? and Whither do we go? By Fredk. Hovenden, F.L.S., F.G.S, F.R.M.S. Illustrated. 1897.

CHURCHILL, J. & A., Great Marlborough-street, London.
Uric Acid as a factor in the causation of Disease. By A. Haig, M.A., M.D., Oxon., F.R.C.P. Fourth edition. Illustrated. 1897. Price 12s. 6d.

CURWEN, J., AND SONS, Warwick-lane, London, E.C.
The Speaking Voice: Its Development and Preservation. By Mrs. Emil Behnke. Price 2s.

FISHER, GUSTAV, Jena.
Handbuch der Therapie innerer Krankheiten. Von Dr. F. Penzoldt und Dr. R. Stintzing. 4. 5. und 6. Lieferungen. 1897.
Klinisches Jahrbuch. Von Professor Dr. Flügge und Professor Dr. v. Mering. VI. 4. 1897.
Bibliographischer Semesterbericht der Neurologie und Psychiatrie. Von Dr. G. Buschan. Dritter Jahrgang. 1897. Erste Hälfte. 1897.
Lehrbuch der Vergleichenden Mikroskopischen Anatomie. Von Dr. Albert Oppel. Zweiter Teil. 1897.

LEWIS, H. K., Gower-street, London.
Aneurysms of the Aorta. By O. A. Browne, M.A., M.D. 1897. Price 2s. 6d.

NEFF, PAUL, Stuttgart.
Die Darstellung Krankhafter Geisteszustande in Shakespeares Dramen. Von Dr. Hans Laehr. 1895.

PENTLAND, YOUNG, J., Edinburgh.
The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin. New series. Vol. ii. 1897.

PUTNAM'S, G. P., Sons, Bedford-street, London, W.C.
Ambroise Paré and his Times, 1510–1590. By Stephen Paget. Illustrated. 1897. Price 10s. 6d.

SMITH, ELDER AND CO., Waterloo-place, London.
Dictionary of National Biography. Edited by Sidney Lee. Vol. liii. Smith—Stranger. 1898.

SPON, E. AND F. N., 125, Strand, London.
Stable Sanitation and Construction. By T. E. Coleman, F.S.I. Illustrated. 1897.

SWAN SONNENSCHEIN AND CO., Paternoster-square, London.
Introduction to the Study of Organic Chemistry. By John Wade, B.Sc. Lond. 1898. Price 7s. 6d.

VOGEL, F. C. W., Leipzig.
Die Histochemischen und Physiologischen Arbeiten. Von Friedrich Miescher. Erster and Zweiter Bände. 1897.
Archiv für Experimentelle Pathologie and Pharmakologie. 40. Band. 3. und 4. Hefte. 1897.

THE MEDICAL PUBLISHING COMPANY, Bartholomew-close, London.
Cleft Palate: Treatment of Simple Fractures by Operation; Diseases of Joints; Antrectomy; Hernia, &c. By W. Arbuthnot Lane, M.S. Price 5s.
Clinical Lectures on Urine. By J. Rose Bradford, M.D., D.Sc., F.R.C.P., F.R.S. Price 2s.

Fourth Annual Report upon the Births, Marriages, Divorces and Deaths in the State of Maine for the year ending December 31st, 1895. (Kennebec Journal Print, Augusta, 1897.)—Transactions of the American Ophthalmological Society. Thirty-third annual meeting. Washington, D.C., 1897. (Published by the Society, Hartford, 1897.)—The British Guiana Medical Annual, edited by J. S. Wallbridge and C. W. Daniels. Ninth year of issue. (Baldwin and Co., Georgetown, Demerara, 1897.) Price 5s.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ARNOTT, GRANT, M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-upon-Tyne.

ANDREWS, C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Norwich Sanitary District, St. Faith's Union, vice E. W. Everett resigned.

BAILEY, J. HAROLD, M.B., Vict., has been appointed District Medical Officer for Pendleton, Salford Royal Hospital.

COX, JAMES, C., M.D., L.R.C.S. Edin., has been re-appointed a Member and President of the New South Wales Fisheries Commission.

DAVIES, RICHARD, M.D. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 3 Sanitary District of the Cheltenham Union.

DOHERTY, J. D., M.B., M.S. Edin., has been appointed Assistant House Surgeon to the Northern Hospital, Liverpool.

DUNLOP, N. J., M.B., Ch.M. Syd., has been appointed Resident Medical Superintendent to the Newcastle Hospital, New South Wales.

EATON, JOSEPH, L.R.C.P., L.R.C.S. Irel., has been appointed a Government Medical Officer and Vaccinator for the Copeland Division of the Electoral District of Gloucester within the Police District of Port Stephens, New South Wales.

GEMMEL, W. A., has been re-appointed Ambulance Surgeon to the Northern Hospital, Liverpool.

HIGGINSON, C. G., L.R.C.P. Lond., M.R.C.S., has been appointed Junior Assistant Resident Medical Officer at the Workhouse by the Chorlton Board of Guardians.

HOLMES, L. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the District of Selby, Tasmania.

HUNTER, R. C., M.R.C.S. Eng., L.R.C.P. Edin., J.P., has been appointed Consulting Medical Officer to the Taff Vale Railway Company, South Wales.

IBOTSON, EDWARD C. B., L.S.A., has been appointed Junior Medical Officer to the Grove Hall Asylum, Bow, London, E.

LAPRAIK, GEO., M.B., C.M. Glasg., has been appointed a Public Vaccinator for the Districts of Waimate Plains and Opunake, New Zealand.

MACLAURIN, CHARLES, M.B., M.S. Edin., has been appointed an Honorary Assistant Surgeon to the Prince Alfred Hospital, Sydney, New South Wales.

MANDALL-COATES, J., M.B., M.S. Edin., has been appointed House Physician to the Northern Hospital, Liverpool.

MAW, H. S., L.S.A. Lond., has been appointed a Government Medical Officer and Vaccinator for the District of Tumbarumba, New South Wales, vice G. de V. Belson resigned.

MCALLISTER, J. F., M.D. Melb., Ch.B., has been appointed an Honorary Surgeon to the Prince Alfred Hospital, Sydney, New South Wales.

MULLINS, GEO. L., M.D. Dubl., L.K.Q.C.P. Irel., has been appointed an Honorary Assistant Physician to the St. Vincent's Hospital, Sydney, New South Wales, vice M. J. Lyden resigned.

NEECH, JAMES T., L.R.C.P., L.F.P.S., D.S Sc. Vict., has been appointed Certifying Factory Surgeon for the Urban District of Atherton and Tyldesley, vice G. H. Evans deceased.

PEARCE, F. H., B.A. Cantab., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Northern Hospital, Liverpool.

RALPH, RICHARD M., M.D., M.Ch., and L.M. R.U.I., L.A.H. Dubl., has been appointed Senior Assistant Medical Officer to the Grove Hall Asylum, Bow, London, E.

ROBERTSON, J. B., M.B., C.M. Glasg., has been appointed Parochial Medical Officer for Portpatrick.

ROWELL, W. H., M.B., B.S. Durh., has been appointed Senior House Physician to the Royal Infirmary, Newcastle-upon-Tyne.

SELLERS, W., M.R.C.S., has been appointed Medical Officer by the Bury and District Joint Isolation Hospital Board.

SIMPSON, R. P., M.D. Durh., M.R.C.S., has been re-appointed Medical Officer of Health for the Weymouth Port.

STEPHENSON, SYDNEY, M.B., F.R.C.S. Edin., has been appointed Ophthalmic Surgeon to the Evelina Hospital for Children, Southwark-bridge-road, London.

THOMAS, CYRIL NELSON, B.A., M.B., B.Ch. Cantab., has been appointed Medical Officer of the Sydney District by the Chepstow Board of Guardians, vice T. P. Carter resigned.

WOODMAN, THOS., M.B., B.S. Durh., has been appointed Junior House Physician to the Royal Infirmary, Newcastle-upon-Tyne.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.
COUNTIES ASYLUM, Carlisle.—Junior Medical Officer. Salary £80 and board.
GENERAL INFIRMARY, Leeds.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing.
HULL ROYAL INFIRMARY.—Assistant House Surgeon for one year. Salary £60, with board and furnished apartments.
JERSEY PUBLIC LUNATIC ASYLUM.—Medical Superintendent for three years. Salary £300 per annum, with house and garden. Applications to the President of the Committee for the Public Lunatic Asylum, Greffe Office, Jersey.
KENSINGTON AND CHELSEA SCHOOL DISTRICT.—Dentist to the Cottage Home School at Banstead, Surrey. Salary £70 per annum, subject to statutory deduction. Applications to the Clerk to the Managers, Guardian Offices, Marloes-road, Kensington.
LEAVESDEN ASYLUM FOR IMBECILES, near Watford, Hertfordshire.—Medical Superintendent. Salary £600 per annum, rising £50 annually to a maximum of £800, together with the emoluments of unfurnished house, coals, gas, washing, milk, and vegetables, subject to statutory deduction. The appointment will be on probation for three months. Applications to the Clerk to the Metropolitan Asylums Board, Nortolk-street, London.
LINCOLN COUNTY HOSPITAL, Lincoln.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.
NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Board, lodging, and washing provided.
NORTH RIDING INFIRMARY, Middlesborough-on-Tees.—House Surgeon. Salary to commence at £100 a year, with lodging, board, and washing, and £5 a year in lieu of beer.
NORTH-WEST LONDON HOSPITAL, Kentish-town-road, N.W.—Assistant Physician.
PARISH OF ST. GILES, Camberwell.—Assistant Medical Officer for the Infirmary, Havil-street, Camberwell, and the Workhouse at Gordon-road, Peckham, also for Relief duty at the Constance-road Workhouse, for one year only. Salary £50, with apartments, board, and washing. Applications to the Clerk to the Guardians, 29, Peckham road, S.E.
ROYAL SEA BATHING INFIRMARY, Margate.—Resident Surgeon. Applications to the Secretary, R. S. B. Infirmary Offices, 30, Charing-cross, London.
SHAFTESBURY HOUSE PRIVATE ASYLUM, Formby, near Liverpool.—Junior Medical Officer, unmarried. Honorarium at the rate of £50 per annum, with board, lodging, and washing.
THE NEW HOSPITAL FOR WOMEN, Euston-road, London.—Two fully-qualified medical women as Clinical Assistants, in the out-patient department.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On Dec. 24th, 1897, at Church-street, Slough, the wife of S. Weaver Adams, F.R.C.S., of a daughter.
EARLE.—On Nov. 25th, 1897, at Lucea, Jamaica, W. I., the wife of Edward R. C. Earle, M.B Lond., M.R.C.S. Eng., L.R.C.P. Lond., Government Medical Officer, of a son.
GARROD.—On Dec. 29th, 1897, at Chandos-street, Cavendish-square, the wife of Archibald E. Garrod, M.D., of a son.
GROOME.—On Dec. 29th, 1897, at Chesterfield House, High-road, Lee, S.E., the wife of Walter Groome, M.B., M.S., of a daughter.
LAWRENCE.—On Dec. 25th, 1897, at Belsize-avenue, N.W., the wife of Laurie A. Lawrence, F.R.C.S., of a son.
LAWSON.—On Dec. 21st, 1897, at Eversleigh, Banwell, Somerset, the wife of David Lawson, M.A., M.D., C.M., of a daughter.
MUSPRATT.—On Dec. 22nd, 1897, at Tantallon, Madeira-road, Bournemouth, the wife of Charles D. Muspratt, M.D., of a son.
PEMBERTON.—On Dec. 21st, 1897, at Banbury, the wife of C. L. H. Pemberton, M.D., of a daughter.
SMELT.—On Christmas day, at 371, Holloway-road, London, the wife of C. A. Casterton Smelt, M.B., C.M., of a daughter.
VINTER.—On Dec. 24th, 1897, at Udal Garth, Torpoint, the wife of Sydney G. Vinter, M.R.C.S., of a son.
WILSON-SMITH.—On Dec. 22nd, at Kidbrooke Lodge, Bath, the wife of T. Wilson-Smith, M.D., of a daughter.

MARRIAGES.

FORD—CRANE.—On Dec. 28th, 1897, at St. John's, Notting-hill, Frank Chubb Ford, M.B., of Ladbroke-square, to Isabel Allen, eldest daughter of the late Edward Crane, of Monte Video.

DEATHS.

BRIGHT.—On Dec. 29th, 1897, at Alvaston, Park-hill, Forest Hill, of pneumonia, Christopher David, fifth son of John M. Bright, M.D., aged 20 years.
HOUSTON.—On Dec. 25th, 1897, at George-square, Edinburgh, John Houston, M.D., Deputy Surgeon-General I.M.S., aged 65 years.
WADHAM.—On Dec. 28th, 1897, at Park-lane, Piccadilly, William Wadham, M.D.
WOODFORDE.—On Dec. 22nd, 1897, at Oakbank, Spencer's Wood, Reading, Mary Ann, the beloved wife of W. T. G. Woodforde, M.D.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 30th, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 24	30·41	S.E.	...	43	42	31	Fzn.	32	Foggy
,, 25	30·49	S.E.	...	44	41	32	33	34	Foggy
,, 26	30·49	S.W.	...	53	48	28	Fzn.	33	Fine
,, 27	30·05	S.W.	0·06	69	52	33	46	48	Cloudy
,, 28	29·90	S.W.	0·09	68	52	47	48	49	Raining
,, 29	29·69	S.W.	0·25	57	55	46	49	51	Cloudy
,, 30	29·22	S.W.	...	53	49	48	49	50	Raining

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.). Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (8th).—Royal Free (9 A.M. and 2 P.M.), Middlesex, (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (4th).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. F. C. Abbott: Congenital Abnormality of the Sternum and Diaphragm with Downward Displacement of the Heart.—Dr. T. J. Bokenham: The Immunisation of Animals against (1) Typhoid and (2) Streptococcus Infection, with an account of the Properties acquired by the Serum of Animals thus rendered Immune.—Dr. Arthur Voelcker: Ulceration of a Caseous Gland into the Bronchus, Death from Asphyxia.—Mr. E. W. Willett: A Case of Lipoma Nasi.—Dr Rolleston: Intrahepatic Calculi.—Mr. Raymond Johnson: Congenital Cystic Kidneys associated with a Cystic Liver.—Dr. Rolleston: The Pancreas from a Case of Diabetes (card specimen). Mr. Jackson Clarke will also show a specimen.

WEDNESDAY (5th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. McCann, Dr. Boxall, and Dr. J. Phillips. Adjourned Discussion on Dr. McKerron's paper on the Obstruction of Labour by Ovarian Tumours in the Pelvis. Papers:—Dr. H. Spencer: Short Note of a Case of Ovariotomy during Obstructed Labour.—Dr. Addinsell: Intermenstrual Pain (Mittelschmerg).

FRIDAY (7th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8.30 P.M. Papers:—Mr. G. E. Twynam: Nephrectomy and its Relation to Pregnancy.—Dr. Thudichum: Inflammation, Abscess, and New Growths in the Cavities adjoining the Nasal Cavities and their Operative Treatment.—Mr. McAdam Eccles: Operation versus Taxis in Strangulated Hernia.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

TUESDAY (4th).—ROYAL INSTITUTION.—3 P.M. Prof. O. Lodge: On the Principles of the Electric Telegraph.

CITY ORTHOPÆDIC HOSPITAL.—5.30 P.M. Mr. E. Noble Smith: On Wry Neck and some other Contractions.

THURSDAY (6th).—ROYAL INSTITUTION.—3 P.M. Prof. O. Lodge: On the Principles of the Electric Telegraph.

SATURDAY (8th).—ROYAL INSTITUTION.—3 P.M. Prof. O. Lodge: On the Principles of the Electric Telegraph.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1897, which was completed with the issue of Dec. 25th, and the Title-page to the Volume, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1897 will be ready shortly. Bound in cloth, gilt lettered, price 1*s*., carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s*., by post 2*s*. 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

RELICS OF DR. MAURIZIO SACCHI.

CERTAIN documents possessed by this "second victim of the ill-starred Bottego expedition" have been brought from Addis-Abeba, and among them are two pocket-books containing his diary. The first describes his return journey from Lake Rodolfo to the Boran country across which his course lay to the seaboard of the Indian Ocean. The second continues the diary till his arrival at Ascebo *en route* to Lake Margherita, but its last leaves are so lacerated as to be illegible. Enough, however, is not known of his fate to complete the narrative, the publication of which is anxiously awaited early this year.

"MODIFIED MILK" FOR INFANT FEEDING.

To the Editors of THE LANCET.

SIRS,—I have read with interest your note on "Modified Milk" in THE LANCET of Dec. 18th, as I have for some months recommended it for infants when breast-feeding was impossible. From a theoretical point of view I regard it as the most rational and scientific method at present before the profession. I have as much objection to recommending a patent food of which I know neither the composition nor the method of preparation as I have to prescribing a patent medicine. With regard to modified milk there is no mystery, and if necessary any intelligent person can prepare it himself. Further, modified milk being made up according to the medical attendant's prescription can be varied not only to meet the requirements of each individual patient but also to satisfy the increasing appetite of each infant as it grows older. I observe that you take exception to the average formula for a healthy infant quoted from Dr. D. J. Evans's paper. May I point out that this is merely a formula suggested by a physician as being that which he himself found useful and that its adoption or rejection by others does not in the least prejudice the case in favour of modified milk. Whatever formula the medical attendant considers most suited to the particular case can be prescribed and made up. From a practical point of view I can bear testimony to the success of the system. I have ordered modified milk when other foods have failed, and so far it has given me entire satisfaction. In the first instance I had the milk modified at home under my own direction, but subsequently it has been prepared for me by the Walker Gordon Laboratory Company, of Great Duke-street, Grosvenor-square, whence it is delivered to any part of London. The fullest account of the method is to be found in Dr. Rotch's work on Pediatrics published by Lippincott.

I am, Sirs, yours faithfully,

E. COLLINGWOOD ANDREWS.

Finchley-road, N.W., Dec. 28th, 1897.

LUGGAGE CARRIER FOR CYCLES.

THE accompanying illustration shows an ingenious contrivance for carrying an obstetric case or other luggage over the back wheel of a bicycle. It is called the Turner Bi-carrier and is constructed of wire. It is fastened by leather-lined, hinged clips with finger nuts. Its weight is 1 lb. and its size about 14 in. by 5 in. To the ordinary rider who wishes to carry a weight of luggage the carrier will be found a boon, and to the medical man who visits his patients on a bicycle it will be found of the greatest convenience. Special "medical" bags are constructed for use with this carrier but as a matter of fact any bag within reasonable dimensions can be carried quite conveniently. For touring purposes the carrier can be strongly recommended. Mr. H. G. Turner, Eldon-grove, Manchester, is the patentee.

TETANUS DUE TO CHRONIC ULCER.

To the Editors of THE LANCET.

SIRS,—Dr. Smyth at page 1584 of THE LANCET of Dec. 18th, 1897, writes, with reference to tetanus caused by chronic ulcers: "I have not been able to find a record of any similar case either among those recently published or in any text-book." A reference to Section 1323: 1. of the "Medical Digest" will show that in the pages of THE LANCET in 1864 a case closely resembling his own is reported.

I am, Sirs, yours faithfully,

RICHARD NEALE, M.D. Lond.

Boundary-road, N.W., Dec. 21st, 1897.

MEDICAL MOUNTAINEERING.

THE recent holidays in connexion with the "feste di Sant' Ambroglio" have been utilised by the Italian Alpine Club for the ascent of peaks dominating the Simplon Pass. The party included a contingent of medically qualified or medically trained members of the club whose presence was, rightly enough, regarded as minimising the "imprudences" of the expedition. Starting from Milan they reached the village of Simplon and attempted to climb the Schönhorn but had to desist on account of the weather. Next day however from Berisal, at which they arrived in sledges, they achieved the ascent of the Fletschhorn favoured by magnificent sunshine and an atmosphere perfectly still. Other and minor successes awaited the party, whose enterprise is worth recording as another proof of the increasing popularity of masculine exercise and athletic prowess in young Italy. In this movement the pioneers have been medical men whose personal participation robs such expeditions as that just mentioned of nearly all their risk, whether to health from exposure or to life or limb from foolhardy adventure.

DEGREES FOR PRACTITIONERS.

To the Editors of THE LANCET.

SIRS,—So many of your correspondents have asked at various times questions as to the difficulty of the examinations for the higher degrees that my own experience may be of benefit to some. Having been in practice for three years I determined to take the M.D. London. The Preliminary Science took about six months' work, then after twelve months' reading during the next year the Intermediate M.B., Primary F.R.C.S., Final M.B., and B.S. were taken in succession. In the third year the Final F.R.C.S. and M.D. were passed. With a certain amount of steady reading a practitioner can easily pass these examinations, the earlier ones giving

probably the greater difficulty as the anatomy and physiology may be partly forgotten, but in my opinion the questions are so scrupulously fair and free from trickery that any man who does his work honestly need have no fear of failing. The time for reading does not interfere with one's medical duties and there is not need for much practical work. Histology, a little physiological chemistry, and biology can easily be done at home; dissection and practical physiology are not wanted. As for organic chemistry one or two afternoons a week for a month would suffice. The final examinations require only reading for men already in practice.

This is my own experience and may appear contrary to the teaching of some, but I am sure that any ordinary practitioner with a certain amount of work could pass the seven examinations within three years. I shall be glad to give further information if any such desires it.

I am, Sirs, yours truly,
M.D., B.S., F.R.C.S.

*** Our correspondent's communication is interesting, but he is modest in supposing that his experience can ever become usual. He stands revealed as a gentleman whose orderly habits and assiduous bent have combined with his intellectual capabilities to make him a remarkably successful candidate at examinations. It is not given to every one to stock their minds so well and it is given to very few to be able to find in their stock the exact article that is asked for at the moment when it is wanted.—ED. L.

FALMOUTH DURING THE WINTER MONTHS.

Q. wants to know: 1. Is there a first-class hotel in Falmouth where ladies travelling alone could be made thoroughly comfortable? 2. Are there comfortable apartments to be had where food in reasonable variety and well cooked and served can be insured? 3. Can good saddle horses be hired, and if so would it be necessary for a lady to take her own saddle and bridle with her?

AUTUMN SUNSHINE AT OUR HOME HEALTH RESORTS.

To the Editors of THE LANCET.

SIRS,—Those persons who watch the daily records of bright sunshine published in the weather reports in the London papers will be puzzled by their variations. For a long while only the observations made at Eastbourne were published but recently others have been added with the result of rather obscuring knowledge. It is only by taking the average of several weeks that a comparison can be made and I am indebted to Mr. Sheward, our borough meteorologist, for the following figures taken from the official publications of the Meteorological Office. They refer to the ten weeks ending Dec. 18th, the latest date available. It will be seen that Hastings has had about three minutes a day more bright sunshine than Eastbourne and Eastbourne about six minutes a day more than Brighton during the most sunless period of the year. Hastings, 220·5 hours; Eastbourne, 215·9 hours; Brighton, 208·1 hours; Llandudno, 201·0 hours; Ventnor, 187·3 hours; London (Westminster), 97·0 hours.—I am, Sirs, yours faithfully,

Eastbourne, Dec. 26th, 1897. CHARLES ROBERTS, F.R.C.S. Eng.

MR. HALL HAINS'S DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—The following additional subscriptions have been received for this fund. Subscriptions should be sent to me.

I am, Sirs, yours faithfully,
HERBERT CARRE-SMITH, Hon. Secretary and Treasurer.

3, Turnham-green-terrace, Chiswick, W., Dec. 28th, 1897.

	£	s.	d.
Mr. Breward Neal, M.R.C.P. Edin.	1	1	0
Sir Thomas Smith, Bart, F.R.C.S. Eng.	3	3	0
Mr. R. G. Hebb, M.D. Camb., F.R.C.P. Lond.	1	1	0
Mr. James D. Miller, M.D.	1	1	0
Mr. Bernard Brodhurst, F.R.C.S. Eng.	2	2	0
Mr. Edward Nettleship, F.R.C.S. Eng.	1	1	0
Fleet Surgeon James D'A. Harvey, R.N. ...	1	1	0
Surgeon D'Arcy Harvey, M.B. Aberd., R.N. ...	1	1	0
Mr. William Domett Stone, M.D. St. And., F.R.C.S. Eng.	1	1	0

DEATH-RATE OF THE SPANISH SOLDIERY IN CUBA.

"APPALLING" is not too strong an epithet for the disclosures which General Losada, Inspector-General of the Royal forces in Cuba, makes in his official report issued on the 12th inst. at Madrid. Of the 200,000 soldiers sent by Spain to put down the insurrection in the island from the beginning of February, 1895, to the beginning or December in the year just terminated not more than 53,000 (a little over one-fourth) are at this moment fit for active service. The 157,000 are either dead or sent back to the mother-land ill or wounded. The causes of this unprecedented death-rate and sick list are (besides casualties in action) mainly three: (1) the clothing furnished to the European troops was in no respect adapted to the climate of Cuba; (2) fatigue; and (3) lack of food. The report, which does not apparently err on the score of reticence, paints a lurid picture of military service in the chief Spanish colony. Under successive generals the three years' campaign, in spite of numberless Royalist "victories" and as many "defeats" of the insurgents, leaves Cuba as precarious a Spanish possession as ever; while a whole generation must intervene before island and motherland alike can recover from the loss of blood, property, and hard cash incurred. To the three Powers which project into the Mediterranean—Greece, Italy, and Spain—recent military experience has been fraught with object-lessons each in its way instructive. One common to all the three is this: never go to war without an adequate supply of its "sinews"; and another—which Italy and Spain combine to enforce—is, always make allowance for climate, tropical or sub-tropical, as a condition which, if unprovided for, may prove as destructive as the enemy in action. Practical observance of these rules would have saved two at least of these unfortunate Powers from disastrous loss—loss not in life of treasure only, but in that "prestige" which they inherit and which has failed them where most required.

"LABOUR COMPLETED WITHOUT RUPTURE OF MEMBRANES."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 25th I notice a case of this kind reported by Dr. Penfold. About eighteen months ago I myself was sent for about 3 A.M. by a midwife who was attending a woman in her confinement but had become alarmed owing to something having come away which they were unable to recognise as having any resemblance to a child. On my arrival I found the patient had had a sudden severe pain and the fœtus, membranes, and placenta were all lying beside her in the bed, having come away suddenly. The membranes being unruptured I quickly ruptured them and endeavoured to bring round the child (which was a nine months one) by artificial respiration. This, however, was unsuccessful, the child giving only one or two gasps and not respiring further. The mother made a rapid and uneventful recovery.

I am, Sirs, yours faithfully,
G. H. PEARCE, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg.

Redcar, Dec. 27th, 1897.

Beta.—We cannot attempt to express an opinion upon the legality of K's action—that is a question for lawyers. We do not see from our correspondent's statement anything unprofessional in K's behaviour. Why should he be debarred from competing for a remunerative appointment because he has done municipal work previously. It will be expedient that K should resign his position on the district council as he cannot be master and servant too.

H. B. R.—We do not understand from our correspondent's statement that B told A what he intended to do when he called upon him. If B did not tell A his intentions we do not see the purpose of the call. If B did tell A what did A say? It would be a great pity that "two neighbouring practitioners and friends" should allow so small a matter to spoil their relations.

L.S.A. Lond.—We are obliged for the circular, but no good purpose would be served by strictures in our columns. The persons who are deceived by such circulars do not read THE LANCET. None of the "medical" men whose names are put down as giving testimonials are on the Medical Register.

L. G. has been so well able to help himself that we have nothing to say. Dr. Spiegelberg's works are in the library of the Royal Medical and Chirurgical Society and probably are in other large or scientific libraries.

Cubebs.—We know nothing of the gentleman. His professions being of the character described by our correspondent we are content to know nothing of him and sympathise with those who know more.

Mr. Henry Pilkington is thanked for his communication. Our attention had already been called to the matter.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Malton Gazette, Chard News, Langport Herald, Western Guardian, Chester Courant, Sydney Daily Telegraph, Western Morning News, Craven Herald, Lancaster Guardian, Times of India, Pioneer Mail, Cape Argus, Scotsman, Leeds Mercury, Architect, Builder, Suffolk Chronicle, Hampshire Post, Dundee Advertiser, Observer and Chronicle, Yorkshire Post, Newcastle Leader, North British Daily Mail, Bristol Mercury, Bridgwater Journal, Bromsgrove Messenger, Liverpool Daily Post, Sheffield Independent, Halifax Guardian, Sussex Daily News, Somerset County Herald, Grimsby News, Essex County Chronicle, Midland Times, Devon Weekly Times, Poole Herald, Malvern Advertiser, Birmingham Post, Cambs Times, Doncaster Chronicle, Manchester Guardian, Cambria Daily Leader, Cornish Telegraph, West Kent Argus, West Middlesex Herald, Charity Record and Hospital Times, St. George's Hospital Gazette, Sanitary Record, City Press, Public Health, Engineer, Reading Mercury, Brighton Gazette, Hertfordshire Mercury, Surrey Advertiser, Local Government Chronicle, Australasian Medical Gazette, Devon and Exeter Gazette, Local Government Journal Falkirk Herald, Liverpool Courier, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mr. F. C. Abbott, Lond.; Mons. J. Astier, Paris; Apollinaris Co., Lond.

B.—Dr. L. S. Beale, Lond.; Messrs. Barnum and Bailey, Lond.; Mr. F. Brooke, West Bridport; Mr. F. B. J. Baldwin, Rotherham; Mr. R. Baker, Lond.; Mr. W. G. Burcombe, Lincoln; Herren Boas, and Hesse, Berlin; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. P. B. Burgoyne and Co., Lond.; Mr. C. Birchall, Liverpool.

C.—Mr. E. L. Collis, Stourbridge; Messrs. Crosbie Bros., Lond.; Mr. H. Carre-Smith, Lond.; Dr. G. Carpenter, Lond.; Cortland Wagon Co., Lond.; Messrs. T. Christy and Co., Lond.; Mr. F. W. Clarke, Manchester; Mrs. A. M. Campbell, Lond.; Mr. R. Cuffe, Woodhall Spa; Messrs. Cassell and Co., Lond.; Chelsea Hospital for Women, Secretary of; Cumberland and Westmoreland Asylum, Carlisle, Secretary of; Mr. J. G. Cloke, Hamilton, Ontario; Mr. H. J. Crossley, South Milford.

D.—Dr. H. Downes, Norwich; Messrs. W. Dawson and Sons, Lond.; Messrs. Davies and Co., Lond.; Mr. S. G. Denton, Lond.; Dr. A. V. Davies, Bridgend; Messrs. Dale, Reynolds, and Co., Lond.

E.—Mr. H. Eales, Birmingham; Dr. F. W. Eurich, Bradford; Dr. H. M. Eyres, Low Fell; Dr. L. Edmonds, Harwich, Mass., U.S.A.

F.—Dr. W. Finney, Kingston; Mr. E. M. Fogo, Lond.; Femur, North Seaton; Falona Food and Cereal Co., Lond.

G.—Mr. A. J. Grant, Lond.; G. D., Lond.; Galigani Library, Paris; Dr. H. M. W. Gray, Aberdeen; Mr. E. A. Griffiths, Lampeter.

H.—Mr. R. B. Hunt, Lond.; Dr. E. M. Holt, Portland, Maine; Messrs. Harrison and Sons, Lond.; Mr. Victor Horsley, Lond.; Mr. J. Heywood, Manchester; Mr. M. F. Hopson, Lond.; Hull Royal Infirmary, Secretary of.

J.—Dr. J. H. Jackson, Lond.; Mr. A. B. Judson, New York.

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